EXTRA-HIGH-VOLTAGE ELECTRIC TRANSMISSION LINES

HEARINGS

BEFORE THE

COMMITTEE ON COMMERCE

UNITED STATES SENATE

EIGHTY-NINTH CONGRESS

SECOND SESSION

ON

S. 1472, S. 2139, S. 2140

BILLS TO AMEND THE FEDERAL POWER ACT

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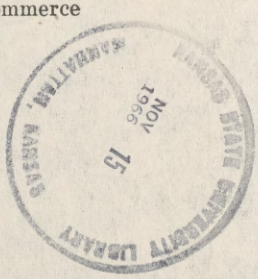

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EXTRA-HIGH-VOLTAGE ELECTRIC TRANSMISSION LINES

WEDNESDAY, JULY 27, 1966

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 10:05 a.m. in room 5110, New Senate Office Building, the Honorable Maurine B. Neuberger presiding.

Senator NEUBERGER. The committee will come to order.

This morning is the first of 3 days of hearings on S. 1472, S. 2139, and S. 2140, bills to amend section 202 of the Federal Power Act to give the Commission the responsibility for reviewing plans for the construction of extra-high-voltage transmission facilities. Bills of this nature were first introduced in the 87th Congress.

S. 1472 was introduced by Senator Metcalf who will be testifying this morning. S. 2139 and S. 2140 are proposals by the Federal Power Commission. Two proposals were submitted because the Commission, as then constituted, was split on which direction review might take.

Extra-high-voltage transmission lines are a new and increasingly important part of the technology of the electric industry. EHV transmission is essential if the consumer is to have the advantage of the inherent economies of large generating units and the protection of properly constituted interconnections and pools. On the other hand, as evidenced by the long record compiled in earlier hearings on underground transmission, significant questions of land usage, outdoor beauty, economics, and so forth are involved in the construction of overhead transmission lines.

These hearings reflect, in part, the changing technology of the industry. Prior to the 1950's there were practically no EHV lines in existence. Now there are many thousands of miles of such lines, with thousands of more miles coming. The Congress has a responsibility to take note of these changes and consider proposals that reflect these changes.

The earlier hearings on underground transmission showed both the need for more vigorous and effective efforts in the undergrounding program and showed the impossibility of putting all lines underground. This being the case, it is essential that overhead lines and facilities be constructed in a manner which, taking an overall view balances the economies of efficient bulk transmission and the cost of maintaining a pleasant environment.

These hearings are an inquiry into this new technology and whether a new Federal response is needed.

Staff counsel assigned to this hearing: Donald Brodie.

(The bills follow:)

[S. 1472, 89th Cong., 1st sess.]

A BILL To amend the Federal Power Act so as to require Federal Power Commission authority for the construction, extension, or operation of certain facilities for the transmission of electric energy in interstate commerce

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 202 of the Federal Power Act, as amended (16 U.S.C. 824a), is amended by adding thereto the following new subsections:

"(g) No person shall engage in the transmission of electric energy, subject to the jurisdiction of the Commission, by means of transmission lines and associated facilities designed to be or capable of being operated at a normal voltage of two hundred and thirty or more kilovolts, or undertake the construction or extention of any lines or facilities intended to be operated at a normal voltage of two hundred and thirty or more kilovolts, or incorporate equipment or construction features designed for or usable in any possible future conversion of the facilities to operate at a normal voltage of two hundred and thirty or more kilovolts, or operate or maintain any such facilities or extensions thereof, unless and until there is in force a certificate of public convenience and necessity issued by the Commission authorizing such acts or operations: *Provided, however,* That the Commission shall, without requiring proof that public convenience and necessity will be served by such transmission, operation, or maintenance, issue such certificate to any person (A) who, or whose predecessor, was on the effective date of this subsection in good faith engaged and continued thereafter to be engaged in the transmission of electric energy at a normal voltage of two hundred and thirty or more kilovolts, or in the operation or maintenance of facilities for such transmission, over the route or routes or within the area for which application is made, and (B) who files application to the Commission for such certificate within ninety days after the effective date of this subsection; and pending the determination of any such application the continuance of such transmission, operation, or maintenance shall be lawful. In all other cases the Commission shall, after notice and opportunity for hearing, decide the application in accordance with the procedure provided in subsection (i) of this section and such certificate shall be issued or denied accordingly.

"(h) Application for certificates shall be made in writing to the Commission, be verified under oath, and shall be in such form, contain such information, and notice thereof shall be served upon such interested parties and in such manner as the Commission shall, by regulation, require.

"(i) Except in the case governed by the proviso in subsection (g) of this section, a certificate shall be issued to any qualified applicant therefor, authorizing the whole or any part of the construction, operation, extension, or maintenance covered by the application, if it is found that the applicant is able and willing properly to do the acts and to perform the service proposed and to conform to the provisions of the Act and the requirements, rules, and regulations of the Commission thereunder, and that the proposed construction, operation, extension, or maintenance, to the extent authorized by the certificate, is or will be required by the present or future public convenience and necessity; otherwise such application shall be denied. Any certificate issued under the provisions of this subsection authorizing the operation of transmission facilities shall be subject to the condition that any capacity of such facilities not required for the transmission of electric energy in the ordinary scope of such applicant's business shall be made available on a common carrier basis for the transmission of other electric energy. The Commission shall have the power to attach to the issuance of the certificate and to the exercise of the rights granted thereunder such other reasonable conditions and terms as the public convenience and necessity may require.

"(j) No public utility shall abandon or curtail any service subject to the jurisdiction of the Commission, or abandon all or any part of its facilities if it would thereby effect the abandonment, curtailment, or impairment of such service, without the permission and approval of the Commission first had and obtained, after notice and opportunity for hearing, upon a finding by the Commission that such abandonment or curtailment is consistent with the public interest."

[S. 2139, 89th Cong., 1st sess.]

A BILL To amend section 202 of the Federal Power Act, as amended, to encourage and facilitate the construction of extra-high-voltage electric transmission lines in the public interest

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it is the purpose of this Act to encourage and facilitate the construction of extra-high-voltage electric transmission lines which are in the public interest and to avoid delays in construction of such lines in order to help make electric energy available throughout the Nation in ample amounts, at low cost, and on fair and reasonable terms.

SEC. 2. Section 202 of the Federal Power Act, as amended (16 U.S.C. 824 (a)), is amended by adding thereto the following subsections:

"(g) The construction of any extra-high-voltage facilities as herein defined and the operation of maintenance of any such facilities or extensions thereof is hereby prohibited except in accordance with the provisions of subsections (h)–(i) hereof.

"(h)(1) Anyone proposing the construction of such extra-high-voltage facilities shall file with the Commission such information as the Commission may require to enable it to determine whether the line is in the public interest. Notice of said filing shall be served upon such interested persons as the Commission shall require. The Commission shall afford to any interested person the opportunity to comment upon said filing.

"(2) Within ninety days after acceptance of any filing containing the information required pursuant to paragraph (1) above (hereinafter referred to as the 'filing date'), the Commission shall approve the proposed construction if in the Commission's judgement said construction appears to be best adapted to serve the public interest and shall issue a certificate to that effect. If in the Commission's judgment there is reason to believe that the proposed construction is not best adapted to serve the public interest, the Commission shall issue an order within such period stating that it is withholding its approval of the proposed extra-high-voltage facilities and summarizing its reasons therefor.

"(3) Whenever the Commission has withheld its approval of an application pursuant to paragraph (2) above, the Commission shall forthwith hold joint or separate conferences with the applicant and other interested persons to explore the possibilities for a revised or alternative proposal which would be best adapted to serve the public interest and to encourage the development and filing by the applicant or others of such an amended or alternative proposal, and the Commission may in its discretion hold hearings on the original or any supplementary filings.

"(4) Within twelve months after the filing date the Commission shall:

"(A) Approve and certify the original or amended proposal if in the Commission's judgement the proposed construction is best adapted to serve the public interest; or

"(B) Recommend specific modifications in the proposal, if in the Commission's judgement the project as so modified would be better adapted to serve the public interest. If said modifications are accepted by the applicant, the Commission shall approve and certify forthwith the proposal as modified. If said modifications are not accepted by the applicant, the applicant may not proceed with construction until such date as may be prescribed by the Commission, but not later than two years from the filing date, unless within such period the applicant and the Commission agree upon a construction plan which the Commission finds and certifies will conform fully with the public interest. If after two years have elapsed from the filing date an alternative proposal has not been approved by the Commission, the applicant shall nevertheless be free to construct the facilities described in his application.

"(i) If the Commission fails to act within any of the time periods specified in paragraphs (2) and (4) of subsection (h) the applicant shall have the right to proceed with the construction of the facilities described in his application or any amendment thereto.

"(j) When any applicant whose proposed construction of extra-high-voltage facilities is certified to be in the public interest by an order of the Commission pursuant to subsection (h) of this section cannot acquire by contract, or is unbale to agree with the owner of property as to the compensation to be paid for the necessary right-of-way to construct, operate, and maintain a transmission line or transmission lines for the transportation of electric power, and the nec-

essary land or other property in addition to right-of-way for the location of facilities or equipment necessary to the proper operation of such transmission line or transmission lines, it may acquire the same by the exercise of the right of eminent domain in the district court of the United States for the district in which such property may be located, or in the State courts. In any such proceeding brought in a district court of the United States, the petitioner may file with the petition or at any time before judgment a declaration of taking in the manner and with the consequences provided by sections 258a, 258b, and 258d of title 40, United States Code, and the petitioner shall be subject to all of the provisions of said sections which are applicable to the United States when it files a declaration of taking thereunder.

"(k) The construction and operation of extra-high-voltage facilities located partly or wholly within the public lands or reservations of the United States shall be subject, in addition to the provisions of subsections (g)–(j) of thi ssection, to such reasonable terms and conditions for construction and operation as the department or agency under whose supervision said lands or reservations falls may (to the extent authorized by law) adopt and the Commission by written order may approve.

"(l) Notwithstanding any other provision of law, the Commission shall have exclusive jurisdiction over the matters within the scope of subsections (g)–(k) of this section.

"(m) As used in subsections (g)–(j) of this section:

" 'Extra-high-voltage facilities' means transmission lines and associated facilities designed to be or capable of being operated at a nominal voltage higher than two hundred kilovolts between phase conductors for alternating current or between poles for direct current, the construction of which was commenced after the effective date of this Act.

" 'Construction of extra-high-voltage facilities' includes construction or extension of such facilities, and the incorporation of equipment or construction features in any such construction or extension which is designed for and usable in any possible future conversion of the facilities to operate at a nominal voltage higher than two hundred kilovolts.

"(n) Subsections (g)–(m) of this section shall apply to all entities enumerated in section 201(f) of this part in addition to others subject thereto."

[S. 2140, 89th Cong., 1st sess.]

A BILL To amend the Federal Power Act so as to require Federal Power Commission authority for the construction, extension, or operation of certain facilities for the transmission of electric energy in interstate commerce

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 202 of the Federal Power Act, as amended (16 U.S.C. 824a), is amended by adding thereto the following new subsections:

"(c) No person shall engage in the transmission of electric energy in interstate commerce subject to the jurisdiction of the Commission, by means of transmission lines and associated facilities designed to be or capable of being operated at a nominal voltage in excess of two hundred kilovolts, or undertake the construction, extension, or modification of any lines or facilities intended to be operated at a nominal voltage in excess of two hundred kilovolts, or incorporate equipment or construction features designed for or usable in any possible future conversion of facilities to operate at such voltage, or operate or maintain such facilities or extensions thereof, unless and until there is in force a certificate of public convenience and necessity issued by the Commission authorizing such acts and operations: *Provided, however*, That the Commission shall, without requiring proof that public convenience and necessity will be served by such transmission, operation, or maintenance, issue such certificate to any person (i) who, or whose predecessor, was on the effective date of this subsection bona fide engaged and continued thereafter to be engaged in the transmission of electric energy at a nominal voltage in excess of two hundred kilovolts, or in the operation or maintenance of facilities for such transmission over the route or routes or within the area for which application is made, and (ii) who files application to the Commission for such certificate within ninety days after the effective date of this subsection; and pending the determination of any such application the continuance of such transmission, operation, or maintenance shall be lawful.

"In all other cases the Commission shall, after notice and opportunity for hearing, decide the application in accordance with the procedure provided in subsection (e) of this section and such certificate shall be issued or denied accordingly.

"(d) Application for certificates shall be made in writing to the Commission and shall contain plans and specifications covering such construction, modification, extension, or operation in such form, contain such information, and notice thereof shall be served upon such interested parties and in such manner as the Commission shall, by regulation, require.

"(e) Except in the case governed by the proviso in subsection (c) of this section, a certificate shall be issued to any qualified applicant therefor, authorizing the whole or any part of the construction, modification, extension, operation, or maintenance covered by the application, if it is found that the applicant is able and willing properly to do the acts and to perform the service proposed and to conform to the provisions of the Act and the requirements, rules, and regulations of the Commission thereunder, and that the proposed construction, modification, extension, operation, or maintenance, to the extent authorized by the certificate, is or will be required by the present or future public convenience and necessity, is consistent with a comprehensive plan for the use and development of the power resources of the area for the purpose of making electric energy reliably available in ample amounts, on fair and reasonable terms, and includes therein to the extent financially feasible sufficient capacity to meet all needs within the affected area for transmission capacity, whether from public or private generation, including reasonable capacity for expansion to meet future loads; otherwise the application shall be denied. The Commission shall have the power to attach to the issuance of the certificate and to the exercise of the rights granted thereunder such reasonable terms and conditions as the public convenience and necessity may require.

"(f) When any person who has been issued a certificate of public convenience and necessity in conformity with subsection (e) above cannot acquire by contract, or is unable to agree with the owner as to the compensation to be paid for the necessary right-of-way to construct, operate, and maintain a transmission line or transmission lines for the transportation of electric power, and the necessary land or other property, in addition to right-of-way, for the location of facilities or equipment necessary to the proper operation of such transmission line or transmission lines, it may acquire the same by the exercise of the right to eminent domain in the district court of the United States for the district in which such property is located, or in the State courts. In any such proceeding brought in a district court of the United States, the petitioner may file with the petition or at any time before judgment a declaration of taking in the manner and with the consequences provided by sections 258a, 258b, and 258d of title 40, United States Code, and the petitioner shall be subject to all of the provisions of said sections which are applicable to the United States when it files a declaration of taking thereunder.

"(g) As used in this section, the term 'person' shall include 'persons' and 'municipalities', as defined in section 3, and any department, agency, or instrumentality of the United States. The term 'two hundred kilovolts' means two hundred kilovolts between phase conductors for alternating current or between poles for direct current.

"(h) No public utility shall abandon or curtail any service subject to the jurisdiction of the Commission, or abandon all or any part of its facilities if it would thereby effect the abandonment, curtailment, or impairment of such service, without the permission and approval of the Commission first had and obtained, after notice and opportunity for hearing, upon a finding by the Commission that such abandonment or curtailment is consistent with the public interest."

SEC. 2. Subsections (c), (d), (e), and (f) of section 202 of such Act are redesignated (i), (j), (k), and (l), respectively.

ATOMIC ENERGY COMMISSION,
Washington, D.C., July 27, 1966.

Senator WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate.

DEAR SENATOR MAGNUSON: You have requested the views of the Atomic Energy Commission on S. 1472, a bill "[t]o amend the Federal Power Act so as to require

Federal Power Commission authority for the construction, extension, or operation of certain facilities for the transmission of electric energy in interstate commerce."

The bill would prohibit, with certain exceptions, the transmission of electric energy, subject to the jurisdiction of the Federal Power Commission, by means of transmission lines designed to be or capable of being operated at a normal voltage of 230 or more kilovolts or to undertake the construction or extension of any such lines or facilities unless there is in force a certificate of public convenience and necessity issued by the FPC authorizing such acts or operations. The bill authorizes the issuance of such a certificate if specified findings are made. The bill also contains the following paragraph:

"(j) No public utility shall abandon or curtail any service subject to the jurisdiction of the Commission, or abandon all or any part of its facilities if it would thereby effect the abandonment, curtailment, or impairment of such service, without the permission and approval of the Commission first had and obtained, after notice and opportunity for hearing, upon a finding by the Commission that such abandonment or curtailment is consistent with the public interest."

The Atomic Energy Commission has no specific comments to offer on this proposed legislation except to indicate its understanding that the language quoted above in no way affects the AEC's regulatory authority with respect to the operation of production and utilization facilities as defined in the Atomic Energy Act of 1954, as amended.

The Bureau of the Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Cordially,

GLENN T. SEABORG, *Chairman.*

DEPARTMENT OF THE ARMY,
Washington, D.C., August 5, 1966.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate.

DEAR MR. CHAIRMAN: Reference is made to your request to the Secretary of Defense for the views of the Department of Defense with respect to S. 1472, 89th Congress, a bill "To amend the Federal Power Act so as to require Federal Power Commission authority for the construction, extension, or operation of certain facilities for the transmission of electric energy in interstate commerce." The Department of the Army has been assigned responsibility for expressing the views of the Department of Defense on this bill.

This bill would amend Section 202 of the Federal Power Act, as amended (16 U.S.C. 824a), to give the Federal Power Commission authority to issue certificates of convenience for the construction or extension, or operation and maintenance, of electric transmission lines and associated facilities, engaged in interstate commerce, which will operate, or which may be capable of operating, at 230,000 volts. The certificate would be subject to the condition that any capacity of such facilities not ordinarily required shall be made available on a common carrier basis.

The Department of the Army on behalf of the Department of Defense has no direct interest in this proposed legislation and accordingly defers to the views of the Federal Power Commission, the agency primarily concerned.

This report has been coordinated within the Department of Defense in accordance with procedures prescribed by the Secretary of Defense.

The Bureau of the Budget advises that, from the standpoint of the Administration's program, there is no objection to the presentation of this report for the consideration of the Committee.

Sincerely yours,

STANLEY R. RESOR,
Secretary of the Army.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., July 26, 1966.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR SENATOR MAGNUSON: This responds to your request for the views of this Department on S. 2139, S. 2140, and S. 1472, similar bills affecting the

jurisdiction of the Federal Power Commission over the construction of extra-high-voltage transmission lines.

These bills represent different attempts to deal with significant aspects of a contemporary and major problem of the electric utilities. As between them, we recommend that S. 2139 not be enacted and S. 2140 be enacted if amended as proposed. S. 1472, the model upon which S. 2140 appears to have been based, has been improved upon in some respects by S. 2140 and for that reason we do not recommend its enactment.

The problem of transmission of energy over extra-high-voltage (EHV) lines is complex and serious. Recent technological changes and improvements have made it not only possible but also economically desirable to construct EHV transmission lines linking sources of generation with distant power systems and consumers. The use of these lines will increase.

It is important that these lines be constructed in a manner that maximizes their utility. They will extend thousands of miles and will occupy hundreds of thousands of acres of land, the use of which will thereafter be severely restricted. Moreover, by their very existence constructed lines will tend to prevent or at least to inhibit the construction of alternative lines between the same or nearby points. Consequently, it is important that the lines be constructed in a manner that permits the greatest use by the greatest number of electric producers and consumers. Effective measures of regulatory authority should, therefore, be maintained over the construction of non-Federal EHV transmission lines.

S. 2139 seeks regulation by consent rather than by direction from a regulatory agency. It contemplates that persons applying to construct EHV facilities will file proposed plans and specifications with the FPC, which will then coordinate the application with other conflicting proposals from the point of view of the public interest. If the Commission should approve the plans, it will issue a certificate to that effect. Issuance of such a certificate would carry with it the right of condemnation by eminent domain procedures. If any of the lands to be crossed should be public lands of the United States, the applicant's right to use those lands would be subject to such reasonable terms and conditions as may be adopted by the Federal agency or agencies with jurisdiction over those lands, if approved by the Commission. If FPC approval were withheld the applicant could nonetheless proceed with construction, without eminent domain powers, after a lapse of two years from the date of the application.

It appears that under this bill Federal agencies will be required to file applications for certification in the same manner as the public utilities.

S. 2139 is inadequate to accomplish its desirable purposes. The history of the development of the electric power industry in this country does not encourage a realistic expectation that the different segments of the electric power industry will be able to reconcile, by voluntary means, the differences that inevitably must arise with regard to who should build these lines and where they should be placed. A review of the long and tortuous history of the Northwest-California Intertie, now under construction, strongly points to this conclusion. It seems far more likely that an agency wishing to construct such lines will make substantive changes in its proposals, in order to achieve FPC certification, only if such certification is essential to permit it to acquire or pass over critical lands.

It also seems undesirable, without more comprehensive legislation, to transfer jurisdiction over granting rights-of-way across public lands for EHV transmission lines from the land management agencies to the Federal Power Commission. At present applicants for this privilege are required to permit their facilities to be used by others, to the extent that excess transmission capacity exists in the lines and is not being used. This principle has been consistently opposed by the industry. In our view this "common carrier" principle is both necessary and desirable to permit the highest and best use of these lines in the public interest.

We also object to the part of the bill that requires prior approval by the FPC for construction of Federal facilities. However, since this feature is common to both bills, we will discuss these objections at greater length below.

S. 2140 gives to the Commission final authority for licensing the construction and operation of EHV transmission lines. The bill requires the filing of an application for a certificate of public convenience and necessity with the Commission for the construction of any line capable of being operated at a nominal voltage in excess of 200 kw. The Commission will be empowered to review the extent to which the construction of such facilities would be consistent "with a comprehensive plan for the use and development of the power resources of the

area". Certificated applicants can be granted powers of condemnation by eminent domain proceedings similar to those provided in S. 2139. The bill prohibits abandonment or curtailment of certificated facilities without the approval of the Commission.

The bill adds a new subsection (g) to the Federal Power Act, extending the terms of section 202 of the Act to include jurisdiction over departments, agencies, or instrumentalities of the United States. This we consider to be wholly unacceptable. The effect of adopting this section would be to put the FPC in complete control of the generation and transmission facilities of the United States. The United States would have to acquire FPC approval to construct any EHV transmission line just as would any other utility under this bill. The existing legislation would be extended and would permit the FPC: to require the United States to interconnect and to sell or exchange energy with any person (present section 202(b)); to require the United States to make emergency connections and generate energy as determined by the Commission, perhaps even to fix the compensation therefor (present section 202(c)); and to prohibit the United States Government from transmitting energy to a foreign country without approval by the Commission (present section 202(e)). It might even permit State regulation of Federal power programs (present section 202(f)).

To itemize these additional powers of the Commission is to recognize the extent to which they are inappropriate. We agree that interstate EHV transmission facilities which are or which are capable of becoming part of an interstate network should be subject to careful Federal supervision and regulation. In the case of non-Federal facilities, the EPC seems the appropriate agency to handle such a job. But where the operating agency is an arm of the Federal Government, it needs hardly be said that the public is already adequately protected from the dangers of unregulated construction by the fact that such Federal construction is subject to Congressional review and approval. The grant of authority provided by this bill would in effect subject Congressional actions to FPC veto or amendment.

It is clear that there must be some means of coordinating and controlling the proliferation of non-Federal EHV transmission lines which will inevitably and quickly occur. To do otherwise would be to expose the American economy to the possibility and perhaps probability of insufficient and badly developed utility development. This we cannot afford.

It can be checked only by the development of a strong, central body with the power to regulate this activity in the public interest. An agency for this purpose already exists—the Federal Power Commission.

The permissive type of regulation exemplified by S. 2139 seems inadequate to meet the needs of the situation. The more forceful approach embodied by S. 2140 is more appropriate, and for that reason we endorse it. Before enactment, however, we strongly recommend that it be amended by striking from page 5, lines 16 and 17, "and any department, agency or instrumentality of the United States".

With this amendment, this bill would be acceptable to this Department.

S. 1472 is similar in scope and intent to S. 2140. S. 2140 describes in somewhat greater detail the standards which must be applied by FPC in granting certificates, permits condemnation powers to be exercised by certificated applicants, and extends the licensing powers of the Commission to cover lines constructed by the Federal Government and by municipalities. We agree that the grant of condemnation powers may be desirable. We have already described our reaction to the bill insofar as it affects Federal agencies. We agree that, in the interests of optimum coordination of EHV interconnection facilities, it may be desirable to afford to the Commission some jurisdiction over the construction activities of municipalities. Certainly these activities can have far-reaching effects. For that reason and to that extend we would not object to the language in S. 2140 extending that jurisdiction.

It is our feeling that modifications of S. 1472 which have been embodied in S. 2140 are desirable, with the reservations already stated. For this reason we do not recommend enactment of S. 1472.

The Bureau of the Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely yours,

KENNETH HOLUM,
Assistant Secretary of the Interior.

OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, D.C., August 12, 1966.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR SENATOR: This is in response to your request for the views of this Department concerning S. 2139, a bill "To amend section 202 of the Federal Power Act, as amended, to encourage and facilitate the construction of extra-high-voltage electric transmission lines in the public interest."

S. 2139 would provide that anyone proposing to construct extra-high-voltage facilities shall file with the Federal Power Commission information concerning such construction. Notice and an opportunity to comment on the proposed construction must be given to interested persons. Within 90 days after such filing, the Commission shall approve the construction if it appears to serve the public interest. If the Commission determines the proposed construction is not in the public interest, it shall issue an order withholding its approval. Whenever the Commission has withheld its approval it shall hold conferences to explore the possibilities for revision of the proposal. Within 12 months after the filing, the Commission shall approve and certify the original proposal or recommend specific modifications, and approve and certify the latter if the applicant is agreeable. If after two years the Commission has failed to approve and certify the construction, the applicant may nevertheless proceed with the construction. Any applicant whose proposed construction has been certified by the Commission to be in the public interest may acquire property by eminent domain, including declaration-of-taking proceedings. Also, construction or operation of extra-high-voltage facilities on Federal lands shall be subject to conditions which have been approved by the Commission and imposed by the agency which has supervision of such lands.

The Commission would have no power under S. 2139 to prevent the ultimate construction of proposed transmission facilities, since after a two-year period an applicant would be permitted to construct facilities regardless of Commission approval. Such a provision affords little protection to the public and in effect results in a lack of meaningful regulation on the construction of extra-high-voltage facilities.

Despite this absence of authority to regulate construction, S. 2139 would provide that all matters within the scope of the measure would be within the exclusive jurisdiction of the Commission. The result of this would be a complete supersession of the antitrust jurisdiction of the Department of Justice. The premise has been, where antitrust immunity is given in agency regulatory matters, that the regulatory agency will exercise a comprehensive scheme of regulations which provides adequate substitute safeguards for the public. Under the bill all governmental regulation and antitrust enforcement power would be eliminated, and therefore, there would be no way of protecting the public or to prevent restraints of trade.

We also note that S. 2139 provides no standards to be applied by the Commission in issuing a certificate. Moreover, it would make no provision for Commission approval or hearing in the case of abandonment or curtailment of services of facilities. This would seem to place existing consumers and service areas in potential jeopardy.

The Department is concerned with the complaints which have been received on the refusal by private power companies to transmit power for REA cooperatives, municipalities, and the Federal Government. Such refusals result in the elimination of competition and are restraints of trade. To prevent such restraints of trade where preferential rights are given, such as the preferred right of construction or transmission and the power of eminent domain that would be given under this bill, restrictions have been imposed upon such industries as railroads and oil pipelines. Hence, we favor requiring a certificate holder to transmit power to anyone who requests it and wheel power for anyone who tenders it. However, the Federal Power Commission, in its statement before your Committee on July 27, 1966, has indicated that this type of condition is not appropriate in every case.

As an alternative we would, therefore, recommend providing that if any certificate holder refuses to transmit or wheel power the Commission shall hold hearings to determine if such refusal was justified—taking into consideration the burden upon the certificate holder to transmit the power and his duty to act in the public interest. Also, the Commission should be given the power to require

the wheeling or transmission of power, prorated if necessary, where the refusal is found to be unjustified. Further, we consider it essential that a certificate holder be willing and able to service everyone who requests transmission at the time the certificate is granted.

Accordingly, for the foregoing reasons, the Department of Justice is opposed to the enactment of this measure.

Incidentially, since title 40, United States Code, has not been enacted into law, reference to sections of title 40 on page 5 of the bill should be amended to a statutory citation.

The Bureau of the Budget has advised that there is no objection to the submission of this report from the standpoint of the Administration's program.

Sincerely,

RAMSEY CLARK,
Deputy Attorney General.

OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, D.C., August 4, 1966.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR SENATOR: This is in response to your request for the views of this Department concerning S. 2140, a bill "To amend the Federal Power Act so as to require Federal Power Commission authority for the construction, extension, or operation of certain facilities for the transmission of electric energy in interstate commerce."

The bill would provide that no person shall engage in the transmission of electric energy in interstate commerce or undertake the construction, extension, or modification of facilities for operating at a voltage in excess of 200 kilovolts unless the Commission has issued a certificate of public convenience and necessity. Certificate holders would be given the right of eminent domain. The bill also provides that no public utility shall abandon or curtail service without a hearing and determination by the Commission that such action is consistent with the public interest.

The Department is concerned with complaints which have been received on the refusal by private power companies to transmit power for REA cooperatives, municipalities, and the Federal Government. Such refusals result in the elimination of competition and are restraints of trade. To prevent such restraints of trade where preferential rights are given, such as the exclusive right of construction or transmission and the power of eminent domain that would be given under this bill, restrictions have been imposed upon such industries as railroads and oil pipelines. Hence, we favor an amendment to the bill to require a certificate holder to transmit power to anyone who requests it and wheel power for anyone who tenders it. However, the Federal Power Commission, in its statement before your Committee on July 27, 1966, has indicated that this type of condition is not appropriate in every case.

As an alternative we would, therefore, recommend that the bill be amended to provide that if any certificate holder refuses to transmit or wheel power the Commission shall hold hearings to determine if such refusal was justified—taking into consideration the burden upon the certificate holder to transmit the power and his duty to act in the public interest. Also, the Commission should be given the power to require the wheeling or transmission of power, prorated if necessary, where the refusal is found to be unjustified. Further, we consider it essential that a certificate holder be willing and able to service everyone who requests transmission at the time the certificate is granted.

Accordingly, subject to the above recommendations, the Department of Justice has no objection to the enactment of this measure.

Incidentally, since title 40, United States Code, has not been enacted into law, the reference to sections of title 40 on page 5 of the bill should be amended to a statutory citation.

The Bureau of the Budget has advised that there is no objection to the submission of this report from the standpoint of the Administration's program.

Sincerely,

RAMSEY CLARK,
Deputy Attorney General.

FEDERAL POWER COMMISSION,
Washington, D.C., July 26, 1966.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Your letter of July 14, 1966, inquires whether there has been any change in the Commission's position on S. 2139 and S. 2140 which were transmitted by the Commission to the President of the Senate on April 16, 1965. On November 22, 1965, Chairman Swidler advised that the Commission favored enactment of S. 2139, but pointed out that the proposal was developed before the massive power failure of November 9, 1965, and that the Commission would carefully assess that experience.

We have studied these extra high voltage transmission bills, and their prototype, S. 1472 (Metcalf), in the perspective of our investigation of power system reliability. We now favor enactment of legislation along the lines of S. 2140, assigning responsibility for finally approving or disapproving EHV transmission projects to the Federal Power Commission, and conferring the right of eminent domain on those applicants who receive certificates.

We believe that the following clarifications and changes would improve S. 2140:

1. We believe the bill should explicitly say, as is now implicit in the general standard of "the public convenience and necessity," that the Commission is expected to consider the public interest in the use of the land and scenic resources of the area as a factor bearing on the merit of an EHV proposal. In assessing this factor, we would expect to give great weight to the views of those state and local agencies with appropriate responsibilities in this matter, and would give prime consideration to the recommendations of such bodies as to primarily local matters such as the precise routing of an EHV line or the esthetic treatment of EHV facilities, such as the towers. On the other hand, we would have to determine the fundamental economic or engineering questions, such as whether the EHV line should be constructed at all or how to apportion the extra costs, if any, of an esthetic treatment of EHV facilities.

2. We believe that in appropriate cases a certificate should authorize the construction and operation of EHV facilities on lands or reservations owned or managed by the United States. In such cases, the certificate should contain such reasonable terms and conditions relating to land use as the responsible land management department or agency develops, but the EHV facilities should not also be subject to general regulation by those departments or agencies.

3. In order to minimize the risk of undue delay in exercising the certificate provisions of S. 2140, we would favor the inclusion of specific authority to employ the informal procedures contemplated by S. 2139 whenever it is possible thereby to expedite a decision for or against issuance of the certificate.

4. In order that certificate regulation commence in an orderly fashion, we believe that the bill should provide an effective date at some reasonable time after its enactment, and that the grandfather certificate provision should apply to EHV facilities whose construction has commenced at the effective date of the statute, even though those facilities have not yet been energized.

The Commission will, of course, present a detailed statement in support of its position at the hearings commencing July 27.

Commissioner Bagge has asked me to advise that he will submit a statement explaining the basis for his change in position regarding S. 2139 and S.2140.

Commissioner O'Connor has asked me to advise you that he continues to support S. 2139 and will also submit a written statement to the Committee.

The Bureau of the Budget advises that there is no objection to the submission of this report from the standpoint of the Administration's program.

Sincerely,

LEE C. WHITE, *Chairman.*

STATEMENT OF CHAIRMAN SWIDLER AND COMMISSIONER O'CONNOR IN SUPPORT OF PROPOSED BILL (DRAFT A, S. 2139) CONCERNING FPC JURISDICTION OVER EHV TRANSMISSION LINES

The past decade has seen remarkable improvement in the technology of extra-high-voltage (EHV) electric power transmission, making it possible to transmit larger quantities of electric energy with greater economy and for greater

distances. As a result, economical long distance transmission over EHV lines of as high as 750 kv is today a reality. As the Commission pointed out in the *National Power Survey Report* "EHV transmission has thus enlarged the marketing area for large blocks of low-cost generation and has also increased the long-standing advantages of interconnecting power systems into power pools covering ever broader geographical areas." (p. 1).

The need for governmental review and coordination of the proposed EHV transmission lines was first brought to the attention of Congress during the 87th Congress when companion bills were introduced by Representative Moss and the late Senator Engle to provide that EHV lines could not be constructed by public utilities subject to FPC jurisdiction until they were certificated by the Commission.

Since the introduction of the Moss-Engle bills this Commission has given the subject a great deal of study both independently and in conjunction with the National Power Survey. The need for legislation to accelerate the construction of EHV lines has been highlighted recently by the recommendation of the Legal Advisory Committee to the National Power Survey composed of leading attorneys from all segments of the electric power industry. The Committee stated that:

"* * * Consideration should be given to amending the Federal Power Act to provide that an entity desiring to participate in the construction of an interstate transmission line for the purpose of power pooling, or interchange, could secure a license for such a line from the Federal Power Commission which would permit such an entity to condemn the necessary rights of way * * *" (*National Power Survey Report*, Vol. II, p. 386).

We are submitting a draft bill which we believe meets the regulatory needs without inhibiting construction of EHV lines in the public interest. In substance the proposal would empower the Commission to serve as a forum to coordinate EHV construction in the public interest. To accomplish this objective the draft bill would authorize the Commission to subject all EHV proposals to critical comments by all interested persons and to scrutiny by the Commission before construction commences but would not subject proposals to the delays inherent in full certification powers. The bill would thus be an extension of the Commission's existing authority under section 202(a) of the Power Act to encourage the voluntary interconnection of power systems.

Under the draft bill any person constructing EHV lines, or lines which could thereafter be converted to EHV, would be required to file with the Commission plans and specifications for the lines. Interested persons would be notified of the filing and they would be afforded the opportunity to comment upon the proposed lines. Hearings or informal conferences could be held by the Commission where the proposal could be publicly examined in light of the views and needs of all interested parties. Within a maximum period of one year the Commission and interested parties could scrutinize the proposals and suggest changes before construction could be commenced, unless the Commission sooner approved the project as being best adapted to serve the public interest.

An applicant whose plans received Commission approval could exercise the rights of eminent domain in the Federal District Courts to condemn rights-of-way needed for such lines, and if desired could utilize the declaration of taking procedure (under which title passes upon the filing of the declaration, subject to later judicial determination of the amount due as just compensation). This provision would carry out the recommendation of the Legal Advisory Committee to the National Power Survey, mentioned earlier. At the end of the one-year period an applicant could proceed with construction even if no Commission approval has been granted, but in such case without benefit of Federal condemnation authority.

Even if a public utility were to decide to proceed with the contsruction of an EHV line without Commission approval, the draft bill provides a means to enable the Commission to assure that all parties would share equitably in its benefits through interconnections with the power pool at appropriate voltage levels. The proposed bill would authorize the Commission to order interconnections "on its own motion", subject to the limitations in section 202(b) which assure fair treatment to all parties. This proposed amendment to section 202(b) would authorize the Commission to take the initiative in the public interest not only with regard to EHV lines but also to interconnection of any electrical facilities. The proposal is adopted in its entirety from a prior unanimous legislative recommendation of the Commission.

The essence of the draft bill, therefore, is to encourage EHV construction which meets the public interest standard set forth therein, to allow a period of time to work out satisfactory arrangements among all the interested parties, to continue the present system under which primary service responsibility rests with the respective electric enterprises, to provide assurance that construction can proceed on a fixed timetable and without undue delay in order to meet the growing demand for electricity, and to provide the Commission with authority to assure access to low-cost power by all power systems large or small.

The cooperative procedures we propose would permit Federal participation in the early planning stages of proposed EHV transmission lines and would give all interested parties a public forum for considering the merits of the proposal. At the same time the regulatory delays and uncertainties inherent in certification proceedings would be avoided.

The bill would confer exclusive jurisdiction on the Federal Power Commission over the matters within its scope, thus encouraging construction of EHV lines by simplifying and clarifying such regulatory procedures as may be necessary and by fixing ultimate regulatory responsibility in the hands of a single regulatory agency. Consistent with this objective the draft bill would make EHV lines located within public lands or reservations subject only to such reasonable supplemental conditions as may be adopted by the department supervising the lands and approved by the FPC.

We have considered the alternative of forbidding the construction of any EHV line unless they are approved by the FPC and have concluded that such compulsory authority is not needed at this time. We believe that recent history of progress in EHV construction provides a sound basis for assuming that the public interest can best be served by principal reliance on a cooperative responsibility to be vested in the Commission and an inducement by way of Federal condemnation rights for approved projects. While we cannot be sure that the voluntary approach will prove adequate, we think it should be tried first because it offers far more promise of benefits to consumers by accelerating the construction of EHV lines.

We are of the view that compulsory authority at this time might well retard rather than encourage construction of needed EHV lines because of the danger of extended delays while the Commission attempted to resolve the complex and controversial issues in these cases and while the courts reviewed the Commission's decisions.

While great advances have been made in EHV technology in the past few years, we are still witnessing spectacular advances. Such rapid technological progress poses difficult problems in trying to arrive at informed technical judgments. For example, the Commission is not equipped to determine whether a particular line should be AC or DC, whether it should be one voltage or another, and at what particular locations and to what extent new loads may be anticipated. We believe the final responsibility for making these judgements should be left to the enterprises in each of the regional systems which will make the necessary investments, after consultation under Commission auspices with all the power suppliers which may be affected. This is a situation which calls for compromise and cooperation, under public scrutiny and encouragement, but without destroying the responsibility of the parties.

EHV lines are the key to system growth and a veto power over their construction could seriously affect the relative growth of the various segments of the industry. In the absence of evidence of damage to the public interest, the power to effect such institutional changes should be left to the parties, to the communities which are involved, or to Congress and state legislatures.

It is important to remember that the bill does not apply to transmission lines below the specified voltage, but only to facilities which are normally parts of interstate networks. The needs for added increments of power capacity year by year are so insistent that many companies, faced with the prospect of indefinite delays under a certification procedure, might well be forced to build facilities at lower votages in order to gain exemption from certification requirements, even though at substantially high costs. To force such a choice would not be in the interest of power companies or their consumers.

We believe the legislation we propose will permit concentration of our efforts on the broad public interest aspects of new EHV lines, working in cooperation with all the parties concerned. It will encourage the construction of EHV facilities which this country needs under conditions of public scrutiny and control which we believe are likely to prove adequate to protect the public interest.

STATEMENT OF COMMISSIONER ROSS IN SUPPORT OF PROPOSED BILL (DRAFT B, S. 2140) CONCERNING FPC JURISDICTION OVER EHV TRANSMISSION LINES

I concur with the remarks of Commissioner Black supporting Draft B and disagree with my colleagues that the voluntary approach is satisfactory.

In discussing the issue of certification of extra-high-voltage transmission lines, it is useful to determine first the present statutory requirements and their history and analyzed whether such laws adequately protect the public interest.

The first real recognition of the problems arising from the construction of extra-high-voltage transmission interstate grids and the implications thereof is set forth in Gifford Pinchot's Message of Transmittal with the Report of the Giant Power Survey to the General Assembly of the State of Pennsylvania in February 1925. In essence, Pinchot suggested that the vast interconnections he foresaw must be controlled by the public if the growing needs of humanity are to be served. As he said, "The question is whether we shall regulate it or whether it shall regulate us."

It was not until 1935 that this problem was squarely presented to Congress. At that time, an attempt was made to require certification of transmission facilities by the Federal Power Commission. However, the state of the art had not, at that time, progressed to the point where the Congress saw fit to enact such legislation.

It should be remembered, however, that by 1960 many states (40) had insisted upon the right not only to authorize interconnections, but 29 states possessed the authority to require interconnections. Thus, we see that already many states have certification legislation of the type now proposed. The mere existence of such state legislation admittedly is not a good precedent for advocating Federal certification power unless such laws have served a useful public purpose in their limited sphere, and unless such laws are inherently incapable of effectively protecting the public when vast interstate connections are involved. It is to be noted, however, that state certification has apparently been something under which the industry could live.

The snowballing growth of power pools with the EHV interconnections is a new phenomenon. Prior to this time, the power of the states to authorize interconnections and to require them has been extremely useful. Among the beneficial results have been the elimination of duplication, the provision of an opportunity to standardize voltages, insurance of the fullest utilization of existing rights of way, the settlement of conflicts between electric systems desiring to interconnect, the identification of uneconomic lines before funds were commited and the granting of a forum to the public in which the necessity of such lines and the route could be determined before the right of eminent domain was granted. In addition, there were growing demands within the states to insist upon a joint use concept in order to minimize the unnecssary taking of land and in order to make the greatest economic use of the land already taken.

While there have been some instances of delays in seeking such certification, the utilities have long ago adjusted their planning so as to take this into consideration. Furthermore, any arbitrary bureaucratic abuse of such power has been rare. Even in that event, the decisions are appealable to the courts of law.

Thus, we see that the very thing sought for here has been a way of life in the utility field for years. It has been accepted in the public interest and the results were generally considered good even though in many cases, the state commissions were and still are understaffed.

Bearing this in mind, what possible reasons can there be given to justify a Federal statute? Federal intervention should be a last resort under our system of government. There are certainly those who will quarrel with the necessity of this type of bill.

However, upon reflection, it should be apparent that the changing character of the electrical industry poses almost insurmountable problems to effective state regulation. This is no indictment of state control but rather a recognition that interstate networks are no longer local problems. Nor are such problems regional. As the National Power Survey has pointed out, not only are regions interconnecting within their own areas but regions themselves are becoming increasingly reliant upon their neighbors. The very benefits sought and achieved to a substantial extent under state regulation now become the goals of interstate regulation. The people of Vermont, for example, are interested in the transmission networks of New York and the rest of New England. Their rates directly and indirectly depend upon the development of adequate interstate pools. The most

efficient development of these pools demand that the interests of adjoining states be considered. Let us also not forget the experience of the Pacific Coast. The intertying of that area necessitated a regional interstate approach. A network for Oregon is not nessarily the best network for the Pacific Coast.

Very bluntly, as most people in the power business realize, it is no longer the parties who control generation that control the industry—it is the parties who control the transmission, the arteries of the industry, that control the destiny of the millions of rate payers of this Nation. With the ever threatening rivalry between public, private and Federal transmission systems, it should be obvious that there should be some instrumentality to referee the building of the proper interconnections and to insure against a needless duplication of facilities. Furthermore, there has to be some method under which the retail sellers, whether private, public or Federal, can be guaranteed the right to use these facilities at a reasonable cost. Otherwise, these very same retail sellers will be at the absolute mercy of the owners of the transmission systems. If there is any justification at all for the maintenance of the *status quo* in the current line-up of public, private and Federal systems, which I believe there is, then such a bill as this is necessary. See also the reasons listed in the Commission's report on the Holland-Smathers bill, S. 218.

The very complexities of interties militate for Federal supervision. In my opinion, if there is to be a choice as to voltage or route or whether there should be an interconnection at all or the timing thereof, only an independent agency such as the Federal Power Commission can adequately weigh the public interest factors and determine the resulting impact on the affected areas and the consumers therein. In fact, that is the very thing this Commission is doing in the *Consolidated Edison* case, Project No. 2338. Our jurisdiction in that case, stems from the fact that the transmission lines are primary lines and thus a part of the licensed project which requires our approval. In this connection, these are the important factors to be considered in ordering an interconnection under present law if an interested party requests a hearing.

There is another factor not to be overlooked, namely, the right of the interested parties, including the public at large, to a hearing on the record with the right of intervention in determining the proper feasibility and location of EHV lines. In most situations, the case will probably be decided quickly and expeditiously without a hearing, as we do in many gas certificate hearings. The engineering testimony of the company will often serve as an adequate basis for such a certificate. However, in the "big" case, the controversial case, the Commission can then serve as the umpire. The parties will be able to present their own views. True, this may delay the proceeding but who are we to say that delay should outweigh the inherent rights of the public to a forum. This is the time when the matter should be settled in the open, not informally between staff and the company.

With the acquisition of right of way becoming increasingly difficult to secure, with more and more local and state governing bodies such as zoning and planning agencies becoming involved, and with the local homeowners increasingly fearful of arbitrary taking under the guise of electrical interstate needs, the necessity of a forum becomes indisputable. The Federal right of condemnation is either helpful or it is not. If it is, then the *quid pro quo* would be the approval of the Federal Power Commission, the agency most capable of judging the public interest, not an operating body, private, public or Federal.

In conclusion, the construction of EHV transmission lines in order to adequately interconnect adjoining utility systems with the resulting savings to the consumer as projected by the National Power Survey is so impressed with the public interest, that either this Nation will regulate them on a public interest basis or the evils resulting from a *laissez-faire* approach will ultimately lead the Nation itself to build, own and operate all extra-high-voltage transmission lines.

STATEMENT OF COMMISSIONER BLACK IN SUPPORT OF PROPOSED BILL (DRAFT B, S. 2140) CONCERNING FPC JURISDICTION OVER EHV TRANSMISSION LINES

I am in accord with the objectives of H.R. 2072 and S. 1472 (89th Congress), which would provide the Federal Power Commission with certificating authority over extra-high-voltage transmission lines operating in interstate commerce.

We are now witnessing the development of vast electric system interconnection, coordination and pooling. This expanding integration of electric systems in the

United States can, if planned and carried out with the public interest a prime consideration, save the electric consumers billions of dollars a year by 1980. If this desirable result is to be achieved, however, it is essential that the Federal Power Commission or some disinterested public agency be provided with the necessary authority to assist the electric power industry toward its accomplishment. I consider it essential in order that the public interest be fully protected that the law provide the Commission with meaningful authority to issue or deny certificates of public convenience and necessity for proposed EHV construction as set forth in the attached draft bill. This bill adopts the basic approach of the legislation introduced by Representative Moss and Senator Metcalf with certain changes.

Chairman Swidler and Commissioner O'Connor have suggested legislation providing essentially for a voluntary type of certificating authority. Their approach would permit any person to construct EHV transmission lines in interstate commerce whether or not best suited to the public interest.

Without the authority to certificate or refuse certification of EHV transmission facilities operating in interstate commerce, we have nothing but the *appearance* of regulation. While the exercise of the Commission's powers of persuasion, which my colleagues' suggested draft contemplates, might well be effective in some instances to bring together differing interests and produce a desirable result which would otherwise not be accomplished, there is no reason to believe that in many cases an applicant is going to substantially alter its plans merely because this Commission holds meetings and conferences and expresses its wishes. Nor do I believe that granting or withholding the power of eminent domain under Federal law would, by itself, provide sufficient inducement, or leverage, or what have you, to produce a different plan than the applicant had previously decided upon.

My colleagues' approach is objectionable for an additional reason. They suggest that the Commission lacks the ability to make the difficult determinations involved in a decision to grant or deny a certificate. Yet they would require the Commission to exercise the same degree of expert judgment and to perform substantially the same duties that compulsory certificating authority would entail, but without any meaningful authority to translate these efforts into the result the Commission deems appropriate and best adapted to serving the public interest. We will, under their suggested legislation, be expected to commit outselves as an administrative agency to endorsing plans for the construction of EHV transmission lines or come up with a plan of our own. If we are competent to do this, the Commission is competent to take the necessary action to assure the construction of the facilities we have determined to be consistent with the public convenience and necessity and on the terms and conditions which will best advance the public interest. We have conducted rather a futile exercise if we must go through all the steps of passing upon a proposal for a major transmission facility and then must sit idly by while our recommendations are ignored.

Chairman Swidler and Commissioner O'Connor assert that delays attributable to the form administrative process might retard the construction of needed EHV lines and that this Commission's power to veto such construction could adversely affect the relative growth of the different segments of the industry. In order to avoid this result, my colleagues would vest final authority over decisions relative to EHV transmission line construction in the sole discretion of utility management. It is suggested that such an approach constitutes abdication of this agency's fundamental public service responsibilities. The arguments with which Chairman Swidler and Commissioner O'Connor support their proposal can be, and frequently are, advanced by those who oppose regulatory control altogether. The concern expressed that exercise of regulatory authority over development of EHV construction might effect changes in the institutional makeup of the industry is not supported. Surely, our colleagues would not argue that the exercise of our existing licensing jurisdiction over hydroelectric projects, for example, has damaged the orderly development of the electric power industry or that delays attributable to the administrative process have inhibited the construction of such projects and the development of our water power resources.

Neither the judgment of management nor that of the Federal Power Commission is sacrosanct or infallible. But this agency exists solely to advance the public interest. Our judgment, as an independent and disinterested entity, is not influenced by the considerations and interests which necessarily and properly motivate the utility industry—considerations and interests which may, however, not always be entirely consistent with the public convenience and necessity. In

this era of rapidly expanding technology, the nation needs assurance that EHV transmission grids will not become vehicles of discrimination between areas of service and classes of customers, nor tools to effect fundamental changes in the organizational makeup of the electric power industry. We need more than inducement and persuasion to provide the necessary safeguards.

I feel that S. 1472 and H.R. 2072, modified as hereinafter outlined would more nearly meet the objectives expressed by my colleagues than the draft legislation which they offer as a substitute. A principal purpose of these proposed changes is to define the bill's applicability to all segments of the industry, public and private. These changes are essential if the bill is to achieve its intended purpose of encouraging the orderly development of effective, efficient, and economic transmission systems and interconnections. Further, it is appropriate to afford developers of certificated facilities the advantages and flexibility which can be achieved through the expeditious process of Federal condemnation and the declaration of taking powers.

The proposed changes would: (1) reduce the voltage capacity of facilities encompassed from 230 kv to 200 kv; (2) make the bill applicable to modification of existing facilities into EHV capacities; (3) specify the filing requirements and eliminate the requirement that such be under oath; (4) establish a legislative standard for certificating such facilities to ensure that all transmission needs of an area would be served; (5) extend its applicability to public bodies; and, (6) grant certificate holders the Federal condemnation rights, including declaration of taking proceedings. In all other significant aspects the legislation proposed by Congressman Moss and Senator Metcalf would remain unchanged.

I attach a draft bill incorporating these suggested changes.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, March 19, 1965.

B–140031.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate.

DEAR MR. CHAIRMAN: This is in reply to your letter of March 12, 1965, requesting our comments on S. 1472.

The bill would amend the Federal Power Act to prohibit the construction, extension, or operation of certain facilities for the transmission of electric energy in interstate commerce without the consent of the Federal Power Commission. Also, the bill would require that such transmission facilities be operated as common carriers to the extent that capacity may be available and that consent of the Commission must be obtained before any service could be abandoned or curtailed.

We have no particular information concerning the desirability of the proposed legislation and since in would not affect the functions of the General Accounting Office, we have no comments or recommendations to offer regarding the bill.

Sincerely yours,

JOSEPH CAMPBELL.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, June 23, 1965.

B–140031.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate.

DEAR MR. CHAIRMAN: Reference is made to your letter of June 15, 1954, requesting our comments on S. 2139, which would amend section 202 of the Federal Power Act, as amended, for the purpose of encouraging and facilitating the construction of extra-high-voltage electric transmission lines.

We have no particular information concerning this proposed legislation and, consequently, we offer no comments on the bill.

Sincerely yours,

FRANK H. WEITZEL,
Assistant Comptroller General.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., June 25, 1965.

B–140031.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate.

DEAR MR. CHAIRMAN: Your letter of June 15, 1965, requests our comments on S. 2140.

The bill proposes certain amendments to the Federal Power Act and we understand was introduced at the request of the Federal Power Commission. We have no special information concerning the subject matter of the bill and since it would not affect the functions of the Generel Accounting Office we have no recommendations to offer concerning its enactment.

Sincerely yours,

FRANK H. WEITZEL,
Assistant Comptroller General.

Senator NEUBERGER. Senator Metcalf, we will be glad to hear your testimony.

STATEMENT OF HON. LEE METCALF, U.S. SENATOR FROM THE STATE OF MONTANA

Senator METCALF. Thank you, Madam Chairman.

I want to commend you and Senator Magnuson for arranging this hearing to consider alternative proposals to amend section 202 of the Federal Power Act.

Perhaps we have turned a corner. A little more than a year ago some of us were here counseling against a proposal to exempt many utilities from jurisdiction of the Federal Power Commission. This week we are considering methods to deal with proposed interstate extra-high-voltage transmission facilities.

The Federal Power Act has stood the test of time fairly well. The best of laws, however, must be reviewed and revised from time to time. When the Wheeler-Rayburn Act was originally written probably no one—with the possible exceptions of Gifford Pinchot, Samuel Insull, and Philip Sporn—visualized the era of giant power, including giant transmission systems, which is now upon us.

I like the way Commissioner Ross put the situation last year. He said:

> Very bluntly, as most people in the power business realize, it is no longer the parties who control generation that control the industry—it is the parties who control the transmission, the arteries of the industry, that control the destiny of the millions of ratepayers of this Nation.

I would add that power distribution systems which cannot obtain wholesale power at reasonable rates are in the same predicament that Englishmen were back in the 17th century, when ferryboat operators overcharged them. That overcharge led Lord Hale to lay down the basic rule of regulation. As he put it:

> Each ferry ought to be under a public regulation: to wit, that it give attendance at due time, a boat in due order and take but reasonable toll.

Today, obtaining electricity is more important than crossing a river. No utility ought to be permitted to gouge the customers which must have power. The goal of power transmission in America today, as I see it, whether reached through negotiation, regulation, or legislation,

must be to permit all electricity, whether produced by Reddy Kilowatt, Uncle Sam, Willie Wiredhand or the city light plant, access for the same fare onto the transmission highways.

Probably the paramount consideration in power transmission is reliability of service. My bill, S. 1472, Congressman Moss' House companion and the Federal Power Commission drafts were all proposed some 6 months before the big blackout in the Northeast last November, and subsequent, smaller blackout in the Southwest. Had I been testifying on these bills a year ago I would have tried to establish the need for the legislation in order to assure realibility of service. I do not believe testimony on that point is necessary any more. The big blackout dramatized the point that some interconnections were less than adequate.

The blackout also showed that the transmission of electricity today is interstate, indeed, even international, in scope. I have a great deal of sympathy for members of State utility regulatory commissions. The legislatures have saddled them with jurisdiction over hundreds—in some cases thousands—of companies. In many cases, the legislatures have not provided them with staff and funds to do more than ratify proposals of the supposedly regulated companies. But no State commission, given all its needs in the way of authority and engineering staff, can control transmission networks which stretch from my State of Montana to Florida, or from New Jersey to Ontario. I do not think that point has to be belabored.

We come, then, to the heart of the issue before this committee—shall the Federal Power Commission be an adviser, as proposed in S. 2139, or shall it be a regulator, as proposed in S. 1472 and S. 2140?

S. 2139 proposes that the Federal Power Commission act in an advisory capacity regarding entities desiring to construct extra-high-voltage facilities. Such entities are to file information with the Commission, which may approve or withheld its approval of the construction within 90 days after the filing date. If the Commission withholds its approval, it shall meet with the applicants and other interested parties to explore possibilities of revision of the original proposal or alternate proposals. Within 12 months of the filing date, the Commission must (*a*) approve the original or alternate proposal, or (*b*) recommend modifications. If the applicants reject these modifications, they may not proceed with construction until a date specified by the Commission or until 2 years after the filing date. Even if the Commission has rejected the proposal, construction may proceed 2 years after the filing date.

Both S. 1472 and S. 2140 take the basic approach that the construction or extension of present facilities into extra-high-voltage transmission lines is to be regulated by the Federal Power Commission. Regulation is to be achieved by the issuance of certificates by the Commission to such entities. Certificates are to be issued if certain conditions are met, including requirements of ability and willingness to conform to Commission regulations regarding these facilities.

I have a more detailed analysis of S. 1472 and S. 2140 in a chart. Madame Chairman, with your permission I would like to insert it at this point in the record.

Senator NEUBERGER. There being no objection, it will be so ordered. (The chart follows:)

SECTION-BY-SECTION COMPARISON OF S. 1472 AND S. 2140

S. 1472	S. 2410
Subsection and provision	*Subsection and provision* [1]
(g) The Federal Power Commission must issue a certificate before any person can construct or extend present facilities intended to be operated at 230 kv or more with the following exceptions: (1) Any person who is, or whose predecessor was engaged in such transmission on the effective date of this subsection and continues to be so engaged, will be issued a certificate. (2) Any person who files application for certificate within ninety days of the effective date of this subsection may continue with such transmission pending the determination of the application by the commission.	(c) This subsection differs from subsec. (g) of S. 1472 in the following manner: (1) It requires a certificate for facilities to be operated in excess of 200 kv rather than 230 kv. (2) It includes the necessity for a certificate for any modification of lines or facilities as well as for construction or extension of present facilities intended to be so operated.
(h) Applicants for certificates shall submit in writing, verified under oath, such information as the Commission shall, by regulation, require. Notice of this application shall be sent to interested parties.	(d) This subsection differs from subsection (h) of S. 1472 in the following manner: (1) It does not require that applications be verified under oath. (2) It adds the requirement that applications contain plans and specifications for construction, modification, extension or operation of EHV facilities.
(i) Certificates will be issued authorizing all or any part of construction, operation, extension or maintenance covered by the application if the applicant is judged to be willing and able to do the acts and perform the services proposed, conform to the provisions of the Act and requirements, rules and regulations of the Commission thereunder and that proposed construction, operation, extension or maintenance is or will be required by present or future public convenience and necessity. Certificates will be subject to the condition that any facilities not used for the transmission of electric energy in the scope of ordinary business shall be available on a common carrier basis for the transmission of other electirc energy. The Commission as the right to attach to the certificate and the rights granted thereunder any reasonable conditions that public convenience and necessity may require.	(e) This subsection differs from subsection (h) of S. 1472 in the following manner: (1) It provides for the modification as well as for construction, extension, operation and maintenance of facilities. (2) Instead of proposing that facilities not required for transmission of energy be available on a common carrier basis, it proposes that facilities must be consistent with a comprehensive plan for the use and development of power sources for the affected area. The purpose of this plan is to provide ample power on fair and reasonable terms to meet, as far as financially feasible, all needs within the affected area for transmission capacity, whether from private or public generation, including reasonable capacity to provide for future loads. This provision must be met in order for the certificate to be granted.

[1] The provisions of S. 2140 are substantially the same as those of S. 1472 unless otherwise designated.

SECTION-BY-SECTION COMPARISON OF S. 1472 AND S. 2140—Continued

S. 1472	S. 2140
Subsectioon and provision	*Subsection and provision* [1]
No analgous provision is made in S. 1472.	(f) Provision is made for the right of eminent domain to be exercised in the U.S. district court of the appro-private district if contract or agreement cannot be reached as to the compensation to be paid for the necessary right-of-way and additional necessary land or property for the construction and operation of EHV transmission line(s).
No such definitions are given in S. 1472.	(g) As used in this section "person" is defined to include "persons" and "municipalities," including individuals and corporations, and any department, agency or instrumentality of the United States. "Two hundred kilovolts" is defined as voltage between phase conductors for alternating current or between poles for direct current.
(j) The Commission must first approve and permit any abandonment or curtailment of service subject to the jurisdiction of the Commission or any abandonment of all or part of facilities if it would effect the abandonment, curtailment or impairment of such service.	(h) This subsection is the same as subsection (j) of S. 1472.
Because the subsections proposed follow the aphabetical order of the present Section 202 of the Federal Power Act, no redesignation of present subsections is necessary.	SEC. 2. Subsections (c), (d), (e), and (f) of section 202 of the Federal Power Act are redesignated (i), (j), (k), and (l), respectively.

[1] The provisions of S. 2140 are substantially the same as those of S. 1472 unless otherwise designated.

Senator METCALF. Certain points of comparison among the three bills might be noted here. Both S. 2139 and S. 2140 define "extra-high-voltage facilities" as operating at a voltage higher than 200 kilovolts between phase conductors for alternating current or between poles for direct current. S. 1472 considers extra-high-voltage facilities as operating at a voltage of 230 or more kilovolts.

Both S. 2139 and S. 2140 provide for the exercise of the right of eminent domain in the U.S. district courts if the right-of-way for the construction and maintenance of EHV transmission lines cannot be obtained by contract or agreement between the parties involved. This provision is explained in more detail in the chart. S. 1472 does not have such a provision.

Madam Chairman, I am not wedded to the precise language of the bill which I introduced. I do, however, urge the committee to espouse the regulatory approach, embodied in S. 1472 and S. 2140.

As I see it, this would be consistent application to today's situation of the philosophy which Senator Wheeler and Congressman Rayburn, and the other members of the Commerce Committees back in the thirties wrote into the Federal Power Act.

A regulatory commission lacking the power to regulate in an increasingly important area of its responsibility can hardly serve the public interest. The Federal Power Commission is an agent of the Congress. If we believe that the public is entitled to reliable service, the multibillion-dollar economies which result from interconnection, and reasonable consideration of the value of scenic and esthetic values in construction of these huge lines, then we should provide the Commission with sufficient authority to do the assigned job.

Regulation is supposed to provide, among monoploy industries, the incentive for improvement which competition provides among free enterprise businesses. Already we have, in the regulatory system, too many situations where inaction disadvantages the consumer. Cost of producing power is decreasing while utility profits are increasing. But because of the "water over the dam" principle of utility regulation overcharges cannot be recovered. Let us not add into this system a proviso, as in S. 2139, whereby any utility can have its way on EHV transmission, despite the FPC, simply by waiting for 2 years.

Madame Chairman, in closing, let me express the hope that the committee will press forward on this needed updating of section 202 of the Federal Power Act.

Madame Chairman, I also have a statement from my colleague in the House, Congressman Moss, who has introduced an identical bill and who also introduced a similar bill with the late Senator Engle in previous Congresses and ask unanimous consent that it may be included in the record.

Senator NEUBERGER. Without objection, it is so ordered.

(The statement referred to follows:)

STATEMENT OF REPRESENTATIVE JOHN E. MOSS TO SENATE COMMERCE COMMITTEE IN SUPPORT OF PROPOSAL TO AUTHORIZE THE FEDERAL POWER COMMISSION TO REGULATE EXTRA-HIGH-VOLTAGE TRANSMISSION FACILITIES

More than four years ago, I introduced a bill (H.R. 12181 in the 87th Congress) to amend the Federal Power Act to require that a certificate of convenience and necessity be obtained from the Federal Power Commission as a condition to constructing, extending, operating or maintaining any facilities for transmitting electric energy in interstate commerce at normal voltages in excess of 230 kilovolts. I did so to meet a new and most significant development in the electric industry, namely, an accelerating trend toward use of extra-high-voltage transmission lines resulting from rapid technological advance. Over 2000 transmission lines of 230 kv or more had already been installed, including 13 experimental 460 kilovolt transmission lines installed in 1961, the first of this voltage ever constructed in this country.

At that time, the Pacific Gas & Electric Co. and the Pacific Power & Light Co. were seeking to create a major regional intertie linking the Pacific Northwest and California, and PP&L requested the FPC to approve the company's issuance of stocks and bonds to be used in part to finance this intertie. Despite a vigorous dissent, the company's request was approved by the majority of the Commission which stated that the FPC does not have authority to determine whether or not such an intertie is compatible with the public interest.

I believe that the naturally monopolistic character of the electric industry and the increasing number of mergers within the industry require public regulation of this expanding growth of electrical interties across state lines, in order to protect the public interest. When the Federal Power Commission stated that it could not provide this protection, I introduced my bill to clearly give it authority to do so.

The situation has not changed in the past four years. If anything, it has become more intensified. During the year ending June 30, 1965, over 4,000 new

lines of 230 kilovolts or more have been placed into service. The FPC's 1964 *National Power Survey* has predicted that vast networks of such lines will be needed by 1980. Their economic impact will be truly enormous.

Although many states have authority to authorize or even require, interconnections, such authority is not sufficient to deal with interstate transmission lines. What we are seeing today is an enormous spurt in efforts to attain the benefits of extra-high-voltage interregional interconnections and pooling. The major lines of the eastern two-thirds of the United States and the major systems on the west coast are now interconnected to some degree. Although some of this interconnection is intrastate in nature, an increasing number of interconnections extend beyond state boundaries. Clearly, as interstate connections have grown and continue to grow, state regulation is no longer sufficient. Federal authority is needed.

I reintroduced my bill in the 88th Congress (as H.R. 2101), and in the 89th Congress (as H.R. 2072). Senator Metcalf's bill (S. 1472) which your Committee is now considering, is identical to my bill.

Basically, these bills provide that the Federal Power Commission will issue certificates of convenience and necessity for the construction, extension, operation and maintenance of extra-high-voltage transmission facilities. A "grandfather" clause provides for issuance of such certificates to all who are engaged in such transmission when the bill becomes effective. Others can get such certificate only upon demonstrating that the proposed construction, extension, operation or maintenance is or will be required by the public convenience and necessity, and will conform to the requirements of the law and the Commission's regulations. My bill further specifies that the certificates be subject to the condition that any facilities not used for the transmission of electric energy in the scope of ordinary business be available on a common carrier basis for the transmission of other electric energy.

Senator Magnuson's bill (S. 2140) makes some modifications in the language of the Metcalf-Moss bill. These changes would extend the definition of "person" to include public agencies, would provide the right of eminent domain, would require certificates for the modification of transmission facilities, would apply to all facilities over 200 kilovolts (rather than 230 kv), and would substitute for the common carrier provision a requirement that the facilities be consistent with a comprehensive plan for the use and development of power sources for the area.

I would accept most of these modifications. I think they are good. I think they would advance the public interest. I agree also, I want to emphasize, with the provisions in Senator Magnuson's bill that transmission facilities be consistent with a comprehensive plan for the use and development of power sources for the affected area, and that the purpose of this plan is to provide ample power on fair and reasonable terms to meet, as far as financially feasible, all needs within the affected area for transmission capacity, whether from private or public generation, including reasonable capacity to provide for future loads.

However, I disagree on the complete elimination of the common carrier provision. The "comprehensive plan" provision is not a complete or adequate substitute. Although it indicates that the power be available for all utilities within the area, it does not specify that the power be available on a common carrier basis. The lack of such specification might lead to interpretation that would negate the common carrier concept. Therefore, I urge that the section should contain express language to make wholly clear and explicit that the transmission capacity would be available on a common carrier basis.

The other bill being discussed at these hearings is S. 2139. This bill also requires that plans for the construction of extra-high-voltage transmission facilities be filed with the Federal Power Commission. The Federal Power Commission may consider these plans and approve them or suggest modifications. However, if the applicant does not agree with the Commission's suggestion S. 2139 permits the applicant, two years after the filing date, to construct such facilities without regard to the Federal Power Commission's views. In effect, therefore, S. 2139 would merely permit the Commission to delay construction of EHV facilities rather than regulating their construction, operation and maintenance as is provided in S. 1472 and S. 2140.

Because I believe that the public interest must be fully protected and because the benefits arising from extra-high-voltage facilities are contingent on adequate access to these facilities, the advisory and delay bill—S. 2139—is totally unacceptable to me.

The construction of extra-high-voltage facilities in conjunction with adequate access to these facilities will confer four basic benefits:

(1) Continuation of competition;
(2) Economy for the electric industry;
(3) Conservation of land;
(4) Economic and social benefit for the consumer.

I. COMPETITION

The first consideration is that of competition. The electric industry, in its present structure, consists of systems which are owned by private companies; or by states or by municipalities; or by cooperatives; or by the Federal Government. Although the electric industry is, by nature, a monopolistic industry in individual areas, the pluralistic structure of the industry provides a degree of competition by comparison. The incentive to reduce rates and increase benefits is provided, not by competition within a given area, but by comparison of benefits given in other areas by other segments of the industry. This is what is sometimes called the "yardstick" of competition.

This pluralistic structure is now in danger of destruction in the same way that competition has been endangered or destroyed in other segments of our country, namely, the large companies get larger, utilizing the economies of size to make it impossible for smaller companies to meet their competition, and thus forcing smaller companies out of business.

Large electric utility companies have been expanding. As of 1964, there were 480 investor-owned electric utility systems, most of which had resulted from the merger and consolidation of some 5,000 systems that were previously in existence. The 100 largest privately owned systems generated about 89 percent of the country's total electric utility energy. These large privately-owned systems have the ability to construct their own transmission facilities and may either refuse to wheel power or charge exorbitant rates for the wheeling of power to smaller utilities, most of which are either publicly or cooperatively owned. Although Federal financing through the Rural Electrification Administration aids the rural electric cooperatives in constructing generating and transmission facilities, there is no such aid for municipally owned public power systems. Moreover, the generating and transmission cooperatives supply only 15% of the requirements of the cooperative segment.

The net result is that control of transmission facilities by investor-owned utilities, without effective regulation of these transmission lines, could mean the death of public electric systems and cooperative utilities. We have seen the dangers of monopolistic control of an industry. The rapid growth of pooling and extra high voltage transmission of huge blocks of power are creating the potential for monopolistic control of the entire electric industry. Prompt enactment of the bills now before you would allow regulation of transmission facilities to prevent such monopolistic control.

II. ECONOMY

The second consideration is that of economy for the industry. There is a great cost advantage in the construction of extra-high-voltage transmission lines. This advantage is explained in the Federal Power Commission's *National Power Survey* (p. 151):

"The most important fact concerning EHV technology is that the higher voltages result in lower transmission costs. The costs of these high voltage lines and terminal equipment increase more or less in proportion to the voltage but the power capability increases basically as the square of the voltage. Losses in transmission are also reduced. As a result of these factors, the cost per unit of power transfer decreases with escalation of voltage levels. This fact explains why, despite the more than doubling of material and labor costs in the last 20 years, power is transmitted today at lower cost units than in 1947."

Thus, a 345 kilovolt line has almost triple the carrying capacity, but requires an investment of only one-third more than a 230 kv line—a 500 kv line has 6 times greater carrying capacity, but requires an investment only two-thirds more, than a 230 kv line—and a 700 kv line has 13½ times the carrying capacity, but requires an investment only 2½ times as great, as a 230 kv line.

The cost advantages may be realized within a given area only if the transmission facility is shared by all utilities in the area. S. 1472 and H.R. 2072 will accomplish this by requiring that the EHV facilities operate as a common

carrier of electric power for any excess capacity on the transmission line. The provision in S. 2140 for a comprehensive plan for the affected area will aid in insuring that all transmission needs may be satisfied. Both provisions are necessary. The comprehensive plan feature is not a total substitute for the common carrier provision.

III. CONSERVATION OF LAND

Lines of higher voltage require somewhat greater area for rights-of-way, but not in the same proportion as the increase in carrying capacity. Thus a 500 kv line with 6 times the carrying capacity of a 230 kv line requires only two-fifths greater width of right-of-way; and a 700 kv line with 13½ times the carrying capacity of a 230 kv line requires less than double the width of right-of-way.

Land presently required for rights-of-way could be put to other uses if one transmission line could provide for the needs of an area. However, this conservation could not be achieved unless such transmission lines are available to all utilities in the area. When the large electric utilities refuse to wheel power, or charge exorbitant rates for the wheeling of power, the smaller utilities will be forced to construct other facilities or to cease operation. If they are forced to build other facilities, the conservation and economic benefits of extra-high-voltage transmission facilities will be negated. If they are forced to cease operation, the competition provided by the pluralistic structure of the electric industry will cease. Either situation would result in a loss to the consumer and to the Nation.

IV. ECONOMIC AND SOCIAL BENEFITS TO THE PEOPLE

The fourth consideration is that of the economic and social benefits to the people of our country. This consideration cannot be separated from the importance of the pluralistic structure in the electric industry. This structure provides the competition by comparison that is necessary to provide the incentive to reduce rates and increase benefits. I said in 1962, and I repeat today: "Control of transmission is a key to the control of electricity—and profits. We are not doing enough to insure that consumers, instead of the private power companies, will have a say as to how that key is used." If the economies for the electric industry gained by the construction of extra-high-voltage facilities are to be reflected in the consumer's monthly electricity bill, we must be assured that the incentives to reduce rates and increase benefits will remain in existence.

The bills before you will also benefit our people in still another important way. Our aesthetic sense is offended by the proliferation of poles and transmission lines, and the resulting "erector set" conditions in many parts of the country. This maze of transmission lines is caused, in many instances, by duplicating or overlapping transmission facilities. This needless duplicaton of facilities would be eliminated if all electric utilities in an area were to have equal access to a single extra-high-voltage transmission line. Of course, the problem would be completely eliminated if underground tranmission facilities could be built in all instances. But until the industry solves the technical and economic problems involved in placing transmission facilities underground, the electric industry will continue to construct overhead transmission facilities. Construction of extra-high-voltage transmission facilities which fulfill the electric needs of an entire area provides a partial solution to this aesthetic problem. By such construction, the landscape will be marred by fewer poles and fewer transmission lines.

Enactment of either S. 1472, or S. 2140, with the modifications I have here discussed, would offer benefits of competition, economy, conservation, and beautification for all our people. Any piece of legislation that can do so much for so large a number of people certainly deserves strong support and rapid enactment.

Senator NEUBERGER. Senator Metcalf, I was interested in your statement that the "cost of producing power is decreasing while utility profits are increasing." Will you elaborate on that?

Senator METCALF. This, of course, is the basis for the ads that appear on the radio and in the newspapers that power is cheaper than ever.

The other day, down in TVA, they made a contract for nuclear power at 2.37 mills per kilowatt. That is cheaper than we can generate power,

Madame Chairman, in our own northwest Bonneville area in many of those hydrodams.

The early dams that we had in the Columbia Basin, of course, with the low interest component and some of the best sites in America, generate power at about that level, but with the increased technology the cost of generating and transmitting power is going down more than the rates are and the utilities in America are among the greatest earners of income of the great businesses of America.

Senator NEUBERGER. How do you explain that, when this is a regulated industry?

Senator METCALF. One of the things that I touched on in my testimony is that it is impossible to regulate some of these interestate corporations that do business in many States when the regulatory agency is only a State public service commission or a State utility commission.

On the other hand, many of the State utility commissions have so much business and so much regulatory jurisdiction, that it is almost impossible for them to do anything but ratify applications made by skilled lawyers and skilled engineers to the utility companies. That is true in my own State, where we don't have enough rate experts and engineers and they have to take care of not only the utilities, but the buses and interstate transportation of railroads and licensed trucks and motor vehicles and all those other things with a very limited staff and small appropriation.

Senator NEUBERGER. Then it would behoove the constituents—I will take Oregon which I know more about—to be informed that they would save more money by providing more facilities to the utility commissioner. Perhaps they could get their rates reduced.

Senator METCALF. They certainly would, according to the Federal Power Commission, Montana Power Co., about which I know the most, has one of the highest rates of return in America. We find that if they earned the ordinary 6 percent—that is the customary standard for regulation—that the householder is overcharged by $5 a month. That is enough to pay the social security under medicare, for example.

Senator NEUBERGER. That is a lot. So it is a boon to the stockholders of Montana or PGE, or whatever, rather than to the consumers, is it not?

Senator METCALF. It should be a boon to the stockholders of the utilities and many of the stockholders of the utilities are benefiting from the new technology that cheaper costs of producing power and the maintenance of rates at the present level. Unfortunately, in some of the companies, the stockholders do not benefit because of stock option provisions and so forth, that a few company insiders take advantage of issuance of stock options and drain out most of the profits.

Senator NEUBERGER. Did that tax credit that we voted a couple of years ago affect utilities so that they could expand their——

Senator METCALF. It has affected many utilities and they have expanded their facilities and many of them have used it for the benefit of their consumers and the ratepayers. There are many who have failed to pass it on to their ratepayers and have taken it as dividends and higher wages and pensions for some of the company insiders.

Senator NEUBERGER. More particularly, about the common carrier provisions of your bill, would this tend to reduce the need for new

lines and rights-of-way because it would encourage multiple use of existing lines?

Senator METCALF. Yes; it seems to me essential that there be some provision so that all people can take advantage of wheeling their power over these extra-high-voltage transmission lines. As I quoted on the first page of my statement, that today it is not the people that control generation, but it is the people who control the transmission that really control the destiny of the ratepayers of the Nation.

Now, I have quickly glanced through the testimony of Commissioner White of the Federal Power Commission and his suggestion of perhaps joint construction and negotiation of joint ventures, so that all the people concerned would go together in building a transmission line; I gather from a cursory look at his statement that would be his answer rather than making them common carriers.

And, of course, any satisfactory arrangement so that all the people who have power, who generate power, have power to transmit, should be permitted to use these lines.

We have insisted that when they build the lines across Federal land, that the Department of the Interior or the Department of Agriculture provide in their regulations that the excess transmission capacity shall be used as a common carrier and, of course, it would only be the excess transmission capacity in any event that would be used by these lines that were constructed by private utilities.

Senator NEUBERGER. The committee is going to be considering these three bills. From your testimony, you are not in opposition to 2140.

Senator METCALF. No.

Senator NEUBERGER. You are opposed to S. 2139 which would just, you say, delay construction 2 years and then they could go on about their business?

Senator METCALF. I am very much opposed to giving a regulatory commission only advisory authority as the other bill would. As I said in my testimony, I introduced S. 1472 before the Commission introduced these two companion bills, 2139 and 2140, and I certainly am not wedded to any language except that I feel that S. 2140 is a bill that I could conscientiously support and 2139 I would feel would not do the job that we have to do to take care of this modern and very exciting development of extra-high-voltage transmission.

Senator NEUBERGER. Senator Cotton?

Senator COTTON. Senator, you have referred to some large profits. I don't wish to put you in the position of criticizing anyone individually so I will put my question this way: Is it your feeling that over a period of years—and without particular reference to present members of the Commission—that the Federal Power Commission has fully discharged its obligations in regulation of private profits?

Senator METCALF. Yes, I would say that the Federal Power Commission has done very well with the authority that we in the Congress have granted the Commission. Sometimes we have made the mistake that we will make if we pass S. 2139 by not giving the Commission enough authority to carry out its regulatory power in the public interest.

I think we have had some very fine public-spirited, outstanding members of the Federal Power Commission since I have been in the Senate.

Senator COTTON. Do you feel that in dealing with intrastate lines that the Federal Power Commission has, as of now, sufficient power, or should Congress grant them expanding power?

Senator METCALF. In areas other than this extra-high-voltage transmission?

Senator COTTON. In general.

Senator METCALF. No; I don't feel that they have sufficient authority. I would like to go over a good many of the sections of the Federal Power Act and try to modernize it, bring it up to date to meet the conditions of the new technology that we have today. It has been a long time since the Wheeler-Rayburn Act was passed and all of these laws need revision and modernization.

My point today is, in bringing up section 202, let us not make the mistake that we have made with some other sections of the Federal Power Act by giving the responsibility to the Commission and not giving them adequate authority.

Senator COTTON. You feel that in this particular field of high voltage lines that it is imperative they should be given adequate authority?

Senator METCALF. I think it is especially important in this particular field because there are going to be systems that stretch over many States, from one region to another, there are going to be interconnections that only the Federal Power Commission can take care of. This advisory jurisdiction would not take care of the important public interest in this new business of extra-high-voltage transmission.

Senator COTTON. Do you feel that the Commission, if given authority, should exercise care that, in extending these transmission lines of high voltage, they see to it that they do not take care of those localities where there is a heavy market, a good deal of industry and a good deal of concentration and neglect the more sparsely populated areas so that they will not share in all benefits that accrue?

Senator METCALF. Of course, Senator, I come from one of the most sparsely populated areas in the United States and I have a great deal of interest in protecting the interests and concern of the sparsely populated areas. These regional interconnections would be, I believe, especially beneficial both to the urban areas and the sparsely populated areas because of the greater flexibility of the use of our present transmitting facilities, so that we would have an opportunity to take care of both these areas such as in my State, where we only have a few consumers or ratepayers per mile, and at the same time take care of the heavy loads in the industrial areas where the great profits accrue to huge utility companies.

One of the exciting things, to me, about this extra-high-voltage transmission and interconnections is that we can go across time zones, we can transmit from one area where we have steam plants to an area where we have hydro plants. In developing even less generating facilities, we can have greater opportunity to benefit all of the ratepayers and the consumers.

Senator COTTON. What I had in mind, and this has no reference to the present management of Tennessee Valley, when I was in the House more than 12 years ago, and serving on the Independent Office

Subcommittee of Appropriations, it was about the time extended lines were perfected to the point where they became practical and could transmit power up to 300 miles, contemplated prior to that. And at that time, under the then management of the Tennessee Valley Authority, they were coming to us for money and were seeking to extend their lines. However, they showed a marked enthusiasm to extend their lines to Atlanta, Ga., for instance, or some other heavy user area which had a tendency to leave the marginal areas in the hands of the private utilities. This, of necessity, put up the price of power in the less populous and less industrialized areas.

Every time the TVA took an area or desired to take an area where there was plenty of use and where there was concentration, they were, by the same token, making power cost higher to the people who were not thus advantageously situated. I presume that is no longer the case, but it is your feeling that sort of thing should be particularly guarded against?

Senator METCALF. I think that is a splendid argument for giving authority to the Commission because governmental agencies, municipal plants, and private utilities all have the tendency to want to go into the high-load areas and we have to have someone that will protect those people in the sparsely populated areas that you and I are especially concerned with and it would have to be the Federal Power Commission or some agency with authority and jurisdiction to take care of them.

And so again, the Senator has stated an important reason for giving additional authority to the Federal Power Commission because we would have to rely upon them to protect us.

Senator COTTON. Back through the years, the private taxpaying utilities have been criticized, and I think with some reason, for giving service to the favorable areas and neglecting the sparsely populated and remote areas. This was the reason for the inception of REA and the co-ops, but when public power and REA get into the field of furnishing industrial power, and they are only human, they are like the private utilities. Then comes a time when they too must be watched for that purpose. Is that right?

Senator METCALF. I am certain of that, and as the Senator pointed out there is a reluctance in every one of these to serve these high-cost, sparsely populated areas, whether it is governmental or the I O U's—the investor owned utilities.

Senator COTTON. They want the ice cream but are a little reluctant to share the spinach.

Thank you.

Senator NEUBERGER. Senator Metcalf, you have been long recognized in the Congress as one of the most informed people on the Federal Power Act and your long interest in it makes this valuable testimony. I think you have laid the groundwork for the discussion to follow on these bills and we appreciate your contribution.

Senator METCALF. I certainly appreciate the opportunity to appear before this committee.

Senator COTTON. I join in the chairman's remarks, too.

Senator METCALF. Thank you very much.

Senator NEUBERGER. We are ready to hear the Honorable Lee White, Chairman of the Federal Power Commission. He has the other members of the Commission with him.

STATEMENT OF LEE C. WHITE, CHAIRMAN, FEDERAL POWER COMMISSION; ACCOMPANIED BY CARL E. BAGGE, VICE CHAIRMAN; LAWRENCE J. O'CONNOR, COMMISSIONER; CHARLES R. ROSS, COMMISSIONER; DAVID S. BLACK, COMMISSIONER; F. STEWART BROWN, CHIEF ENGINEER; AND DAVID J. BARDIN, ASSISTANT GENERAL COUNSEL

Mr. WHITE. Madam Chairman and Senator Cotton, we didn't come to outnumber or overwhelm you, but to demonstrate the Commission's deep interest in these legislative proposals.

Immediately to my right is Commissioner O'Connor, Commissioner Ross, Commissioner Black, and on my left is Commissioner Bagge. At the far left of the table is Stewart Brown, the Commission's Chief Engineer and the Head of the Bureau of Power, and at the right end of the table from where I sit is David Bardin, Assistant General Counsel of the Commission.

We have for you a 54-page statement, Madam Chairman, and in all candor, it has been very carefully put together and the majority of the Commission is solidly behind it. But in kindness to you and to the audience and even to ourselves, if there is no objection, I should like to request that it be incorporated into the record in toto. I will very substantially abridge the first 25 pages or so, and then at that point, pick up the text and even there make substantial deletions.

There are also some illustrations and examples in the prepared statement that the pertinent, but not necessarily worth taking the time of the committee.

Senator NEUBERGER. You are an experienced witness before congressional committees, and we will trust your judgment in handling it. The entire testimony will be put in the record.

(The entire testimony follows:)

STATEMENT OF LEE C. WHITE, CHAIRMAN, FEDERAL POWER COMMISSION, ON S. 1472, S. 2139, S. 2140, 89TH CONGRESS, BILLS TO AMEND SECTION 202 OF THE FEDERAL POWER ACT RESPECTING EXTRA HIGH VOLTAGE TRANSMISSION OF ELECTRIC ENERGY

Madam Chairman, each of the three bills which we study today attempts to modernize the regulatory provisions of the Federal Power Act to bring national policy to bear upon the application of modern extra-high-voltage transmission in the economic and dependable growth of the nation's supply of electric energy. The need for public review of extra-high-voltage transmission proposals by a federal agency was first brought to the attention of Congress in 1962 by the late Senator Engle and by Representative Moss (S. 3432; H.R. 12181, 87th Congress). The Moss-Engle bill is with slight modification now before the Committee as introduced in this Congress by Senator Metcalf (S. 1472) and Representative Moss (H.R. 2072). Also before the Committee are two bills introduced by Chairman Magnuson at the request of the Federal Power Commission: S. 2139 and S. 2140. (A detailed analysis of the three proposals is attached to this statement.) These three bills represents different means of implementing a common conviction that the extra-high-voltage (EHV) transmission technology introduces new dimensions to the electric power industry which demand Congressional attention to develop national policy.

The development and study of these bills illustrates the important factors in EHV construction plans for the national interest. These EHV plans involve

system stability and other reliability factors; efficient coordination of systems; access for all systems, large and small, public and private, to the benefits of economies of scale achieved through the new technology; and the impact of the new technology on scenic, historic and recreational values fundamentally affecting the enjoyment of our land by the people of this country. Accordingly, EHV transmission is a vital area for Congressional policy-formulation.

The Commission is unanimous in seeing the need for EHV legislation. The majority recommends enactment of S. 2140 providing for certificate regulation of EHV transmission lines, with amendments as indicated below. We believe that this legislation will promote the construction of EHV lines while protecting the public interest. Commissioner O'Connor has asked me to indicate that he believes that a consultative review will better accomplish these objectives and, therefore, supports S. 2139 as explained in his written statement submitted to the Committee today.

All members of the Commission are here today and available to answer the Committee's questions.

The Commission has not yet completed its studies of the November 9, 1965, power failure in the northeastern United States and parts of Canada. Although we believe that FPC regulation of EHV transmission would provide a powerful tool to enhance system reliability, it is entirely possible that we may have further recommendations for reliability legislation at a later date.

THE GROWTH OF INTERCONNECTION

Our electric industry is evolving rapidly in the direction of greater interconnection and coordination. Many Americans first became conscious of this fact last November 9, when a large area of the nation—an area which was interconnected, but only weakly coordinated—was darkened for varying periods of up to thirteen hours. The process of interconnection has gone on for years, until today most of America's electric facilities are interconnected in some way. There is still a large but declining number of systems operating in total isolation. Often, however, the only interconnection between systems is a low-capacity tie used only in emergencies.

As the Northeast Blackout demonstrated, an inadequate interconnection system may present serious, but little-recognized hazards. Fragmentary planning, lack of concern for the place of a particular facility in the future, inadequate interconnections, and failure to consider the need of small systems to participate in the benefits of coordinated operation are pitfalls in the path of good system design, which we believe this legislation would help avoid. The electric industry leaders and the Commission are both convinced that the industry's ability to continue to meet the increasing demands being placed upon it depends in large measure on extending and strengthening interconnections and full coordination of systems. Since this drive toward interconnection of systems is one of the most important applications of the extra-high-voltage technology with which these bills deal, I should like to discuss it briefly, in a little more detail.

The question has been raised, with increasing frequency since the Northeast Blackout last November 9, whether interconnection is in fact desirable, and what advantages it can claim over isolated operation. The answer, at the risk of some oversimplication, is that interconnection has numerous advantages over any other mode of operation, and if carried out by means of well-designed transmission interties of adequate capacity will make the systems more reliable and more resistant to outages at less cost than they could be if operated independently.

Reliability of service is, and ought to be, a vital concern of every power system. Well-planned interconnection can further this goal, primarily by allowing a system whose equipment suffers a malfunction to rely on an instantaneous and automatic influx of power from its interconnected neighbors. Thus massive failures of generating equipment can be taken in stride with little more than a flicker of lights. But it is equally true that these benefits can be expected only if the interconnections themselves are equal—as many of those now in use are not—to the heaviest conceivable demands that may be placed on them. For example, among the earliest occurrences in the Northeast Power Failure was the separation of ties between CANUSE (the loose interconnection which blacked out) and the PJM power pool embracing systems in Pennsylvania, New Jersey and Maryland. These ties consisted of a few 230-kv. lines, whose automatic controls opened the ties to prevent damage from the excessive power flows. If the ties had been stronger, and had remained closed, the PJM pool, backed up by the Interconnected Systems Group with which it interconnects, might have made up the

deficiency in generation in New York and prevented some of the worst effects of the blackout.[1] As Dr. Philip Sporn, one of the industry's experts on interconnected operation and a pioneer in extra-high-voltage technology, put it: "The reason for the disaster of November 9 was thus not interconnection but *inadequate* interconnection."[2]

The increased reliability afforded by adequate, well-planned interconnection might be reason enough to encourage its development. But there are other benefits to be gained by the interconnection and coordinated operation of systems. One important economy that can be effected is the reduction of generation reserve requirements. It is standard practice for a utility operating in isolation to provide itself with standby generating capacity sufficient to cope with the loss of its largest single generating unit. This is an expensive requirement, and is likely to become more so as the size of generators increases. But to the extent that the same system is fully coordinated with its neighbors and with additional systems the reserve requirements are decreased radically. This is so because the probability that every system in the interconnection would experience the loss of its largest unit at the same time is infinitesimally small. The principle is somewhat the same as that employed by insurance companies in the pooling of risks. By distributing the risks over a large enough pool, the amount of reserves that the group as a whole needs to provide is less than the aggregate necessary if all operated independently. A well-designed transmission system must, of course, provide substantial reserve transmission capacity; but in many cases transmission reserves cost far less than generation reserves.

Other economies available through interconnection include the ability to take advantage of load diversity—the fact that different systems will experience their peak loads at different times of the day or year owing to differences in time zone, or in climate, or to random diversity resulting from the different living and working habits of various communities.

When a group of utilities band together they are often able to effect savings by providing themselves with larger generating units than could be justified by their individual loads. The use of larger generating units can result in extremely large savings: 30 to 40 percent as between the cost of a one thousand megawatt unit and ten one hundred megawatt generators. Fuel is used more efficiently, and such economies as the use of unit trains to transport coal to the plant are possible. This principle is now being advanced by the formation of joint generating companies by groups of interconnected utilities. Such enterprises make it possible for the medium-sized system to realize the economies of large generating units without overextending its financial resources.

Finally, there is an intangible benefit from interconnected operation: utilities which function cooperatively as a matter of daily working routine tend more intensively to exchange new ideas for improving service and increasing efficiency.

We believe that the legislation under consideration today will promote these goals, by helping insure that the electric industry provides itself with the best-designed, most broadly useful, and most reliable system of interconnections that the combined ingenuity of its designers can devise.

I do not recite these advantages of interconnections because they are being grossly overlooked by the electric systems of our country. They are, in fact, not new concepts but ones that have been increasingly brought into use as programs of transmission and interconnection are expanding throughout the nation. They do need emphasis, however, and there are many localities in which the merits and economic advantages of strengthening interconnections are not being fully appreciated and evaluated.

I have great confidence in the utility industry. The Federal Power Commission, through its numerous Advisory Committees appointed to assist the Commission in the National Power Survey, has had close contact with many of the outstanding executives and technical directors of our power systems. Their thoughts and our thoughts were mutually and beneficially exchanged in the Survey studies and the document which evolved bears many of the results of these fruitful exchanges. As we said in our report on the Northeast power failure, "The power failure of November 9 and 10 has made a deep impression on the public because of its widespread nature and because of the difficulty and delay in discovering the origin. It should nevertheless be considered in perspec-

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[1] PJM has under construction a 500-kv. line connecting it with Consolidated Edison, but this line was not yet ready for service last November.

[2] Sporn, *Interconnection, Coordination and Integration,* Address before New York Society of Security Analysts, April 20, 1966, p. 5.

tive. The service standards of the industry are very high, and interruptions are, on the whole, short and infrequent. The problem arises not because service is poor but because the universal and increasing dependence of the American public on this form of energy makes any widescale interruption seriously disruptive. The prime lesson of the blackout is that the utility industry must strive not merely for good but for virtually perfect service." There are good indications that the industry is responding to the challenge of the Northeast failure and many outstanding programs of strengthening transmission networks and interconnections to other systems are currently in progress.

EHV: ITS VALUE TO INTERCONNECTION OF POWER SYSTEMS

If interconnection makes sense—and I have tried to demonstrate that it does—EHV is the key to its benefits. A number of advantages make EHV transmission a nearly certain preference where the choice is between one or two high-capacity circuits and a large number of smaller ones.

Perhaps the most important advantage, from the system planner's point of view, is that EHV transmission is cheaper. The cost of the lines themselves and of the terminal facilities increases more or less in proportion to the voltage; but the power-carrying capability of the line increases roughly as the square of the voltage. The following table from the National Power Survey Report shows the relation among investment, load capacity, and voltage of transmission lines:[3]

Voltage	Relative investment	Relative load capacity	Representative investment per mile (including right-of-way)
230 kilovolts	1	1	$60,000
345 kilovolts	1⅕	2¾	77,000
500 kilovolts	1⅔	6	99,000
700 kilovolts	2½	13½	143,000

But the savings do not end with the construction of the lines themselves—even though the lower cost per kilowatt-hour transmitted might usually be reason enough to use a high voltage level. The EHV line generally transmits power with less loss than a collection of smaller lines having the same aggregate capacity. Furthermore, the costs of terminal facilities—transformers, switching equipment, and so on—vary approximately as the voltage used, so that once again the amount of power that can be transmitted increases faster than the cost when voltage is increased.

EHV lines also provide benefits in addition to cost savings. One of the most persistent and challenging problems facing the utility industry is the conflict between its need for land for rights-of-way and the public's increasing awareness of other claims upon land use in the best interests of the community. Land use problems are not simple, and there is no one solution; but the widespread use of EHV technology can make a valuable contribution to reconciling the demand for larger and larger quantities of electric power with the need to preserve areas of scenic, historical, or residential value. The amount of land needed for transmission rights-of-way increases roughly in direct proportion to the voltage. Consequently, with an increase in voltage, the amount of additional power that can be carried increases faster than the additional land needed to accommodate the lines. The National Power Survey's Advisory Committee, which studied this topic, made these recommendations for width of right-of-way at various voltages:[4]

Voltage and phase spacing	*Right-of-way width (feet)*
230 kilovolts; 18-foot phase spacing	125
345 kilovolts; 32-foot phase spacing	150
500 kilovolts; 38-foot phase spacing	175
700 kilovolts; 45-foot phase spacing	225

Thus a 500-kv line, with an advantage of six to one in capacity over the 230-kv facility, will require only 40 percent more land. For the same capacity, six

[3] National Power Survey Report (1964), Vol. I, p. 151.
[4] National Power Survey Report (1964), Vol. II, p. 88.

230-kv circuits would be needed; and, assuming two circuits on each right-of-way, 375 feet would be required. If the six 230-kv circuits were constructed separately, they would require rights-of-way totalling 750 feet in width, and the waste of land in that case would be almost 70 acres for every mile of line.

Another advantage of EHV transmission, directly related to cost but having much wider social implications, is the added flexibility in plant siting that it may make possible. If the savings in transmission costs are sufficently great, it may be cheaper to transmit the power generated than to transport the fuel (coal) needed to generate it. The result would be the siting of plants near their sources of fuel or availablity of water rather than near their load centers. Developments in this area are already taking place, the importance of which this consideration in maintaining a safe level of air quality in our large cities needs no underscoring. And as long as it is felt to be preferable to locate nuclear generating plants at some distance from population centers, EHV transmission can do its part to minimize the delivered cost of their output.

How EHV projects are developed today

From its conception to its consummation an EHV proposal must cross a series of hurdles including some or all of the following: engineering and management evaluation, negotiation with other utility systems, certification by state regulatory commission, review by local zoning board, federal regulation by the Agriculture or the Interior Departments in exchange for the right to cross federal lands, right-of-way acquisition of non-federal land, antitrust law review, and ultimately construction.

The length of time required by utilities for the detailed planning, authorization, construction and testing of EHV lines varies widely with the circumstances. Shorter lengths of lines at intermediate voltages which are being fitted into a network whose general configuration is already formed can be planned in as little as six months and constructed within, say, a year and a half to two years. However, major additions in the higher voltages can be expected to require two years of intensive planning and board studies and from three to four years for delivery of materials, construction and testing.

The proper design of major additions of transmission facilities must include careful engineering to achieve the results desired by the utility enterprise. Engineering includes stability studies to determine whether the relevant interconnected electric systems would be able to operate in a condition of electric stability under foreseeable contingencies. In such studies, technically termed transient stability studies, the engineer takes account of existing as well as proposed facilities, and includes consideration of the facilities owned by interconnected utilities even though they may not be participating in the particular project then contemplated. In some instances the planning for such transmission projects involves a high degree of coordination with engineers from other utility systems; in other cases there is relatively little consultation in developing the plans. But in any event, the professional engineer designing new transmission facilities must take account of the physical characteristics of interconnected utility systems whether or not he consults with engineers working for those systems. As a consequence, the electric utility planner must design transmission facilities for his own system (or a handful of interconnected systems), to operate reliably as part of a network of many more systems. The planner's geographical horizon in developing a new EHV transmission project extends across many states, even though the particular facilities to be built may be constructed in only one or a few states.

After a utility has settled upon the plan it wishes to pursue, negotiations with other utility systems may protract the preliminary stages. Neighboring systems may seek changes in the plans to make the EHV facilities and their operation more useful to their systems. Affected land users may similarly demand changes. Under present law there is no systematic federal mechanism for resolving conflicts involving interstate EHV transmission lines. Conflicts of this type have arisen in a number of projects where, under present law, they could not be ignored. Thus the cooperation of utilities certificated by a state commission to build transmission lines in an area to be traversed may be essential to avoid a contested certificate hearing. The acquiescence of excluded utilities may be essential to avoid antitrust litigation, a matter recently studied by this Committee in connection with S. 3136 introduced by Chairman Magnuson. If the lines are to cross federal lands or reservations, dissatisfied utility systems, including the federally owned systems, have recourse to the Departments of Agriculture or Interior under the Departmental right-of-way regulations. Local zoning

boards may have some jurisdiction. The lack of a comprehensive regulatory scheme may itself give rise to unduly protracted negotiations and a multiplicity of proceedings. The existing mechanisms for reconciling these conflicts deserve our serious attention.

Existing State regulation of interstate EHV transmission

Public utility commissions in 37 of the states have jurisdiction over construction of at least some transmission lines by at least some utility systems but some populous states such as Texas and Ohio exercise no regulation. The state-by-state details appear in Appendix A attached to my testimony.

The limitations on the jurisdiction of the state commissions are numerous and some states permit broad exceptions and exemptions. Of the 37 with some sort of certificate authority, 13 state statutes exempt extensions of facilities in territories already served when the extension is in the "ordinary course of business". Under such a provision, the California PUC has held that it lacks jurisdiction to require a certificate application by one of the participants in the Pacific NW-SW Intertie which plans to construct 500-kv lines aggregating 274 route miles (at a cost of $41 million) as part of the Interie but all within the utility's own service area.[5] Moreover, only 13 of the 37 states with some regulatory jurisdiction over transmission lines have clear authority over lines constructed by municipally-owned systems and only 17 have clear authority over lines constructed by cooperatively-owned systems.

The unequal application of the state regulatory statutes to different classes of transmission lines suggests, at the risk of oversimplification, that the state provisions were often designed to meet the kind of questions which arose when the industry was more fragmented than it is today. They seem oriented toward assuring the stability of the privately-owned utility enterprise by insuring that they do not construct wasteful or unnecessary facilities, or suffer harm from invasions of service areas. The state statutes do not appear to focus sharply on the technical problems of interconnection or utility aesthetics.

As technology makes the electric utility industry increasingly interstate in character it seems inevitable that state regulation alone is inadequate. State law cannot accomplish the coordination of electric generation and transmission on a regional and interregional scale. For example, consider a mine mouth generating plant in New Mexico transmitting to load centers in California by means of transmission lines crossing Arizona (and also, doubtless, interconnected with additional states). The assorted interests at stake in this project, including mining, generation, land use and consumption, may raise interstate conflicts which can only be resolved satisfactorily at a federal level.

On the other hand, many of the land use issues such as aesthetics include a peculiarly local dimension although they also carry larger, even national implications. This Committee examined some of these factors as they involve the choice between overhead and underground transmission during the recent hearings on S. 2507 and S. 2508.

In recent years, there have been several attempts by local zoning boards—some of them successful—to compel utilities to place their lines underground. Thus despite a determination by the Public Service Commission that underground construction was not necessary, the town of Huntington, New York, succeeded in requiring such construction of several miles of 138-kv line, by use of its zoning authority.[6] The Marlyand Court of Appeals has also held that local zoning authorities may require underground construction.[7] On the other hand, some zoning authorities have been forbidden to add requirements of underground routing of lines by New Jersey and Pennsylvania cases holding that the state utility commission is the body properly charged with resolving all such issues.[8]

The recent major case before the California Public Utilities Commission, previously cited,[9] serves as an illustration of some of the land use complexities that can arise in the planning and construction of an EHV line. The utility proposed to strengthen its system by means of 500 kilovolt lines. A group of

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[5] *Duncan* v. *Pacific Gas & Electric Co.*, 61 PUR 3d 388 (1965).

[6] *In re Long Island Lighting Co.*, 268 N.Y.S. 2d 366 (S. Ct., Suffolk County, 1964), affirmed *sub nom. Long Island Lighting Co.* v. *Horn*, 17 N.Y. 2d 652, 269 N.Y.S. 2d 432 (1966).

[7] *Deen* v. *Baltimore Gas & Electric Co.*, 240 Md. 317, 214 A. 2d 146 (1965).

[8] *In re Public Service Electric & Gas Co.*, 35 N.J. 358, 173 A. 2d 233 (1961) and *Duquesne Light Co.* v. *Upper St. Clair Tp.*, 377 Pa. 323, 105 A. 2d 287 (1954).

[9] *Duncan* v. *Pacific Gas & E. Co.*, 61 PUR 3d 388 (September 14, 1965).

complainants, mainly rice farmers over whose lands the lines were to be constructed, began a proceeding before the California Commission, contending that the utility should obtain a certificate of public convenience and necessity, that the lines would seriously interfere with their agricultural pursuits and particularly with the aerial dusting and spraying of their crops, and that the Commission should order the lines rerouted. The proceeding was a long one, involving over 175 individual parties; the complaint was filed in September 1964; hearings were held in December 1964 through March 1964; the PUC decided the case in September 1965. Rehearing was denied by the PUC in November 1965; and the Supreme Court of California denied a petition to review in March 1966. We understand that construction of other segments of the Intertie proceeded while this case was being tried. The California Commission concluded that the utility was not required to obtain a certificate, since the lines were extensions within territory already served, necessary in the ordinary course of business, and such projects, by California law, need not be certificated. Nevertheless, the Commission took pains to examine the complainants' contentions, much as it would in an actual certificate case, and in particular the alternative route they proposed.

As I shall later explain, we believe that a local evaluation of land use issues should be given great weight in a federal regulatory scheme. It would be unthinkable, however, for a state agency to block altogether the construction of an EHV interstate transmission line for reasons of state policy alone. As a corollary, in the absence of national policy, opponents of a project may well question on the power of a state forum to fully consider their claims.

Existing departmental right-of-way regulations

Where an EHV project is to cross federally-managed lands, rights-of-way must be secured from the appropriate land management agency in the Interior or Agriculture Departments. In the absence of any statute such as the bills we are studying to formulate national transmission policy, these departments have promulgated regulations which go beyond strict land use regulation into matters of electric power transmission. These regulations require that each application be reviewed by the Secretary of the Interior to assure that the proposed facility will not conflict with the power-marketing program of the United States.[10] In case of conflict, changes may be required as a condition to granting the right-of-way permit "upon equitable contract arrangements covering costs and other appropriate factors." Moreover, the regulations require that surplus capacity of the transmission facilities be made available for transmission of federal power.

Existing antitrust factors

As this Committee has developed in the hearings on S. 3136, potential antitrust litigation may be a formidable planning factor when two or more utilities wish to join in an EHV project. We understand that the possibility of such litigation has lead to renegotiations of EHV plans. The record of the hearing held by this Committee July 12 and 13, 1966, on S. 3136 sets forth the nature of these problems and the competing views of the public interest involved.

Existing restrictions on non-Federal right-of-way

Where EHV lines are not to cross federally-managed lands, rights-of-way must be secured from many owners either by negotiation or by exercise of the right of eminent domain. All but three states grant electric utilities the right of eminent domain in at least some circumstances, but this right is often circumscribed. Several state statutes limit the width of the right-of-way which may be secured through eminent domain; others include a specialized prohibition such as that against taking land owned by a railroad.

Perhaps the most serious of the difficulties in this field arises from the unavailability of the eminent domain privilege in some states to out-of-state corporations. Even if the line is being built jointly with a local untility corporation, the problem of joint ownership remains.

The adequacy of existing statutes to facilitate the construction of EHV transmission lines was studied by the Legal Advisory Committee to the National Power Survey. The Legal Advisory Committee, which consisted of attorneys associated with all segments of the electric utility industry, concluded:[11]

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[10] 36 Code of Federal Regulations 251.50–251.52. 43 Code of Federal Regulations 2234.4–1.

[11] *National Power Survey Report* (1964), vol. II, p. 386.

"In some states, existing statutes could not be used to condemn a right of way to be owned in common if one owner were a foreign corporation."

The Legal Advisory Committee recommended: [12]

"Consideration should be given to amending the Federal Power Act to provide that an entity desiring to participate in the construction of an interstate transmission line for the purposes of power pooling, or interchange, could secure a license for such a line from the Federal Power Commission which would permit such an entity to condemn the necessary rights of way in a manner similar to that provided in Section 21."

THE NEED FOR FEDERAL REVIEW

All the economic, social and engineering factors indicate that EHV transmission should, and will, become an increasingly important part of our electric industry's planning and building. The question with which we are faced here today is whether this EHV planning and building should be under governmental review.

I believe, as I think most of us do, that a pluralistic power industry, with independent yet cooperating units under many types of control—private, cooperative, municipal, and federal—is the best type of system we could have. But such a coordinated pluralistic system can grow and function to its full potential only if it does so in an orderly way. The nationwide coordination of our electric power systems must develop gradually from local interconnection through larger and larger regional and interregional interconnections. It will do so under the aegis of numerous different entities, private and governmental. The task facing the power industry is to assure that this development proceeds in such a way that each new addition is as useful as possible to the interconnections of which it is—or will be—a part; that facilities are not needlessly duplicated; that new construction is planned with an eye to future coordination as well as to the needs of the present; that the benefits of our increasing technological capability are realized as widely as possible throughout the industry; and that systems which by economic and engineering logic should be coordinated are not excluded by their neighbors. With foresight of this kind, our power industry can continue to improve in economy, reliability, and social responsibility.

One of the traditional functions of a regulatory commission—state or federal—is to prevent duplication of facilities where it would be economically wasteful. Indeed, the whole concept of a public utility as a business somehow different from the ordinary competitive industrial concern depends primarily on the idea that the grant of a regulated monopoly can, by avoiding the construction of two or more plants to perform identical functions, result in better and cheaper service for the community. The electric industry has, for many years, had particular difficulty in avoiding duplication not justified by economic realities, caused in part by the rivalry between its public and private and cooperative sectors and, in some instances, by ignorance of the plans or capabilities of neighboring systems. In either case, the result is excessive expense—in money, labor, and land—which could have been avoided and which, once incurred, may not result in the best possible service. If, on the other hand, certification of EHV projects were the rule, there would be a forum where the intra-industry differences which may prevent adoption of the best plan could be resolved. The knowledge that a procedure of this kind would be required might itself provide the impetus for systems to consider possibilities for cooperation that previously seemed impossible. The same forum would act as a clearinghouse for information, and so assist the industry in its planning by making clear to its members what their neighbor utilities intend for the future. These functions are, of course, of particular importance with the growth of interconnection.

If each local electric system were still isolated from its neighbors, a certificate of public convenience and necessity could rest on the relatively simple findings that there was a need for service and that the proposal was adequate and feasible. But with 97 percent of the industry interconnected to some degree, and with more and stronger interties being built and planned each year, the effect of a particular transmission line project may be felt over much of the nation. In addition, each project must be considered from the point of view of its impact on our nation's power system as it will be five, ten, or twenty years in the future. Under such circumstances, it is not too much to say that a

[12] Id., p. 386.

national forum for the bringing together of affected parties, the discovery of all the relevant facts, and the development of the project best suited to the present and future public interest is a practical necessity.

The idea of a forum, where all aspects of a new transmission line proposal can be thoroughly explored, has another attractive feature. It can stimulate the company, city, or government agency planning the project to itself consider every phase of its design and construction, and it can heighten for the top echelons in management their sense of a direct responsibility for justifying every aspect of the proposal in the public interest. Focusing public attention on EHV projects can help promote these desirable results. For example, the public is entitled to assurance that stability studies have been made of the potential impact of credible, if unlikely, events on the proposed transmission systems and that a professional judgment vouches for the stability of the design. The requirement of an agency proceeding, where those responsible for a proposal must justify each aspect of it on its own merits, is in my view the best way to insure this kind of thoughtful and well-coordinated planning.

We have spoken so far of the benefits of economy and reliable service which we believe the proposed legislation would bring about. These have always been primary concerns in any utility service, but there is another consideration, which has more recently become a matter of major importance to the public, that is, the social issue of land use. The problem most frequently arises, at least when the electric industry is under discussion, as a question of preserving the natural beauty of the landscape; but it has other important implications as well. Conservationists are concerned to preserve natural beauty or wildlife habitats while property owners may present a case against the invasion of residential areas by transmission lines. Some projects might threaten areas of historic interest or special recreational attractiveness. The utility industry has, to its credit, made outstanding efforts to reconcile its own needs for more land and new plant with the demands of the public at large for preservation of the landscape. But here, as in the case of electric service itself, we ought not to be satisfied with less than the best solution available. Congress has, in a different sector of the electric industry, recognized the problem and given the Commission power to deal with it. Section 10(a) of the Federal Power Act was amended in 1935 to make the recreational possibilities of hydroelectric sites an explicit issue in licensing proceedings. The Commission has accepted that responsibility and, in my opinion, is discharging it well.

While it has actually denied licensing of a project, though feasible and beneficial, on this ground,[13] the Commission has generally taken pains to reconcile the need for water power with the myriad demands of recreation, environmental beauty, and wildlife conservation, which the statute directs it to consider. Many of these same considerations are as valid for transmission line projects as for hydroelectric dams, and the Commission has early used it power under Part I of the Act (limited to primary project lines) to require aesthetic treatment of transmission lines.[14] Such factors are as much a part of the public convenience and necessity as is the need for ample supplies of power at reasonable cost.

Why review by the Federal Power Commission?

It is appropriate that the review function contemplated by these bills be performed by the Federal Power Commission, the federal agency entrusted by the Congress with federal regulatory and informational responsibilities for the electric utility industry. The FPC is an independent regulatory commission. We manage no power lines or electric systems. The Commission is in no sense a competitor of the systems it would be asked to review under these bills.

One of the important byproducts of the Commission's National Power Survey was that it brought together on a joint project all of the diverse segments of the industry in an atmosphere which was conducive to cooperation. I believe it is fair to say that the Commission presently enjoys a high degree of confidence of all sectors of the industry. Moreover, our increasing attention to the aesthetic quality of the environment should also reassure those who are concerned with the protection of our natural resources and the promotion of a higher quality of living. The FPC would appear to be the logical agency to which to entrust the certification of EHV transmission lines.

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[13] *Namekagon Hydro Co.* v. *F.P.C.*, 216 F. 2d 509 (CA 7 (1954)).

[14] In licensing Project No. 1854 (Priest River), an early case, the Commission required location of all transmission lines "with due regard for the recreational and aesthetic values of the locality" and to "preserve to the maximum degree warranted, the natural environment features." 2 FPC 1037, 1040 (1941).

WHY CERTIFICATE REGULATION RATHER THAN VOLUNTARY CONSULTATION?

The central difference between S. 2139 and S. 2140 is the incorporation in the latter bill of the principle shared with S. 1472 that no jurisdictional facility may be constructed without a certificate of public convenience and necessity. I would like to explain, therefore, why the Commission feels that this provision, admittedly more stringent than the "voluntary" approach of S. 2139, will protect the public interest more effectively.

First, it cannot be overemphasized that today every system depends not only on its own facilities but on those of its interconnected neighbors. It would probably cause no surprise if one were to point out that a single poorly designed or inadequate line on a large utility system can cause the collapse of service over its entire service area. And the fact that the same area might be served by the interconnected systems of several independent utilities would not change the physical phenomena of transient instability: the outage would be as extensive whether the lines involved were under one ownership or a dozen. When it comes to reliability of service, the public should not have to rely exclusively upon independent managements—regardless of their efficiency and their desire to provide their own customers the best possible service—to voluntarily consider the needs of neighboring systems, particularly when these systems are part of a different segment of the industry. By the same token, it is appropriate that the public through its government should assume a share of the responsibility for the safety and reliability of interstate EHV electric transmission systems.

Anotehr important benefit to be gained from the grant of compulsory powers such as are contemplated by S. 2140 is the assurance that small systems, regardless of the nature of their ownership, will be able to share in the benefits of interconnection. Under S. 2139, the Commission would have no real control over the design, capacity and routing of the line, and it would be unable to help small systems, some of which may be in active competition with the entity proposing to build the new line, to share in the benefits possible from the new technology.

The Commission's experience under the voluntary, consultative coordination provisions of section 202(a) demonstrates that some systems—though fortunately not industry as a whole—are apt to decline coordination proposals for strong relations with their neighbors. The pending legislation, however, would give these systems an opportunity to make their case for inclusion in the project from the very beginning—not as appendages, attaches as an afterthought, and very likely at greater cost than if they had been designed into the original plans.

In the matter of aesthetics the consultative approach could well prove particularly ineffective. Utilities are under a public obligation to minimize their costs and properly take great pride in their having done so. It is understandable, therefore, that they might sometimes resist proposals to spend funds on undergrounding or other appearance improvements. Under S. 2139, some applicants might consult for the statutory period, but go ahead as originally planned thereafter rather than submit to costly aesthetic conditions.

In my judgment, it would be often unfair to the managements of the utilities to expect them to undergo substantial outlays at their customers' or stockholders' expense on the basis of informal consultations and voluntary response to public counsels. Settlements arrived at in formal proceedings can be justified to the customers and the board of directors. But it is somewhat more difficult to explain the basis for altering plans if a two-year wait is all that is necessary to let it go on.

Finally, I seriously question whether the Congress—as a matter of fundamental policy—would consider undertaking measures to promote and facilitate EHV constructions unless accompanied by a realistic and comprehensive regulatory program. In our view, the most effective way of accomplishing this is through compulsory certification. The consultative approach would merely give the appearance of regulation without providing sufficient means for enforcing the public interest once it is determined.

Precedents for the proposed certificate legislation

Regulation of the type proposed in this bill is not a new idea. Not only has the experience of many states shown that it can work successfully without undue interference with the industry, but the Federal Power Act itself was, as originally introduced, to have included a certificating power very similar to that we now propose. The original Wheeler-Rayburn bill, Title II of which became Parts II and III of the present Federal Power Act, included certificate jurisdiction over construction and abandonment of utility facilities. This pro-

vision was removed in committee without explanation, but the Senate report on the bill expressed the thought that it might be needed in the future: [15]

"While it may ultimately be found desirable to adopt a provision of this kind, the committee is of the opinion that for the present there is no imminent danger of excessive extensions that would prove dangerous to consumers."

The electric industry has changed in many ways since 1935, and other interests than those of consumers must be considered as it changes and expands still further. Conservation and land use issues have arisen which frequently conflict with the economic interests of consumers. The need which Congress foresaw in 1935 is now a reality.

It may be instructive to look for a moment at certificate jurisdiction as it is already exercised by the Federal Power Commission. For nearly a quarter-century, since the certificate requirement was made generally applicable in 1942, interstate natural gas pipelines have been required to obtain certificates of public convenience and necessity. This requirement has not interfered with the growth of the natural gas industry, at least if its expansion in the past 25 years is any index. On the contrary, the volumes of gas transported have increased steadily each year; and the percentage of gas produced which is marketed in interstate commerce (and therefore under Commission jurisdiction) has grown rapidly, this last figure having increased from 28 percent in 1938 to 58 percent in 1964. Between 1945 and 1964, natural gas transmission line mileage increased by 165 percent.

The vast majority of pipeline certificate cases are disposed of quickly: unopposed applications, the largest category, are decided in an average of 62 days, from filing to final order. The few pipeline certificate proceedings which have achieved notoriety for their length of time have been competitive hearings, where two or more pipelines were seeking to serve a new market through mutually exclusive proposals. Electric utilities are more generally securely fixed in particular market areas, and for this reason there would probably be fewer such cases on the EHV transmission docket. Besides, it is likely that many seemingly competitive proposals would in fact represent the efforts of different segments of the industry to achieve dominance in the affected area. As an engineering matter, the proposals might be nearly identical. The Commission could, in such cases, perform a valuable service by bringing the rivals together in cooperation on a project which would benefit both and might frequently serve the public interest better than the construction that either would or could have undertaken alone.

The Federal Communications Commission also administers a system of certificating lines for telephone, telegraph, and other common carrier communication.[16] No carrier is permitted to undertake the constructive or extension of lines, or acquire or operate any line or engage in transmission over such lines, without a certificate of public convenience and necessity. There are exemptions for local or intrastate lines and for those acquired in mergers and consolidations. This is an active field of regulation—during fiscal 1963, for example, the FCC authorized 331 applications for telephone cable, wire, and carrier construction, costing over $241 million. Technological developments in this regulated industry have been rapid, with expansion of microwave and co-axial cable transmission and experiments with such advanced communications devices as masers being carried on constantly. Despite the complexities of this field, however, it does not appear that the communications industries have been hampered in their growth or delayed in their technological development by the FCC's exercise of certificate jurisdiction.

Would certification unduly delay EHV construction?

The most serious criticism of S. 2140, in my judgment, is the charge that it might create long delay in the construction of valuable EHV projects, and consequently hinder the rapid spread of new technological benefits. If I believed this would be the result of EHV certificate legislation, I would find it difficult to support the principles of S. 2140. I am convinced, however, that certificate legislation, properly administered, will not work substantial delays. Instead it may well accelerate the completion of EHV projects.

I note at the outset that the consultative EHV bill, S. 2139, provides for a fairly substantial amount of delay in its two-year suspension provision. Leav-

[15] 74th Congress, 1st Session, Sen. Rep. No. 621 (May 14, 1935), p. 20.
[16] 47 United States Code 214.

ing this aside, however, I believe that in the long run the exercise of compulsory powers from the first stages of Commission proceedings may save rather than waste time. Consider the case of a large EHV project which is so designed as to exclude a number of small systems which might reasonably have been included. Under S. 2139, the Commission would make every effort to persuade the proponent of such a line to include them; and its efforts in this direction might well occupy the entire two years allowed. If at the end of that time the line were built as designed, the small systems would probably still wish to obtain the benefits of interconnection. If they could do so elsewhere, they might—with the result that a further series of projects would come before the Commission for consideration. On the other hand, these systems might choose to present their case under section 202(b). After proceedings under this provision had been completed, the result would be more or less what the Commission could have accomplished in a single proceeding under S. 2140—with the added disadvantage that the small systems would be latecomers into an interconnection not designed to accommodate them, and that the costs of establishing connection would very probably be greater than if the entire complex of issues had been before the Commission when the new project first appeared on its docket.

The certification statute would expedite rather than delay EHV projects if administered to permit maximum consideration of divergent views in the early stages of a proposal, before it is normally disclosed in present practice. I would expect under S. 2140 that in every major case of a kind liable to give rise to controversy, the Commission would not wait until a fully-shaped project was presented to it in the formal application. We should expect to establish a preliminary procedure, conducted as informally as possible, to assure that all interested parties learned of a proposal at the earliest possible time. Useful procedures are suggested by the experience under Part I of the Federal Power Act. We have recently promulgated a regulation requiring would-be hydroelectric licensees to consult state and federal fish and wildlife conservation agencies before they file their formal applications and to reflect in an Exhibit to their application a conservation plan worked out as a result of such consultation.[17] Somewhat similar procedures would probably prove fruitful in the EHV certification field. Thus the reliability studies should be examined by our staff before the application is formally filed so as to permit time to require additional studies, if necessary, before plans are finally presented. Similarly, regular procedures should be established for informal consultations among all utility systems in the relevant planning area before the applicant or applicants formally present their proposal.

By providing a series of well-understood informal processes backed by the potential for formal hearings if necessary the certificate regulations will facilitate the orderly resolution of many issues which, under the present divisions of responsibility, may be left hanging until the last minute. By granting a federal power of eminent domain to successful applicants, the legislation would remove the necessity of securing the support of each intervening holder of a state certificate and permit the formulation of interstate transmission plans to proceed on the most rational economic and technical basis. By removing the artificial restraints of our present system of haphazard controls, the certificate bill would tend to speed up the process of EHV construction.

In order to minimize the danger of delay, we favor inclusion in S. 2140 of the specific authority to employ the informal procedures contemplated by S. 2139 whenever it is possible thereby to expedite a decision one way or the other. To this end, we suggest that the paragraph of S. 2140 commencing at page 2, line 25, be amended to read:

"In all other cases the Commission shall expeditiously decide the application in accordance with the standards and procedures of subsection (e) of this section, after notice, and after engaging in such conference, hearing, or argument procedures, if any, as the Commission determines are necessary to resolve disputed issues of fact law and policy."

No formula of words, of course, can eliminate the possibility of delays. But given a will to shape efficient procedures backed by a clear legislative history that the Congress intends an efficient certificate procedure to prevail the danger of delay in contested cases can be overcome.

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[17] FPC Order No. 323, 31 Federal Register 8779, 18 Code of Federal Regulations 4.41, 4.50.

Should aesthetics be spelled out as a consideration?

As I have indicated, the Commission believes that considerations of land use and scenic beauty make up part of the complex of the public interest and are properly a consideration under the general standards proposed in all three bills. We would favor explicit language to that effect, however, and also propose that S. 2140 be amended to recognize the great weight that should be given to local opinion in the matter of aesthetics to the extent that this may be accomplished without impairing the interstate interest in the transmission of electric energy in commerce. These objectives could be achieved by inserting the following paragraph between lines 11 and 12 on page 3 of S. 2140:

"In determining the public convenience and necessity, the Commission shall give due regard to the public interest in the use of the land and scenic resources of the area. The Commission is instructed to provide by regulation for the submission of views and reports by interested local, state and regional bodies with appropriate responsibilities for the land use and scenic resources of the area; the Commission shall give great weight to the views of such local, state and regional bodies in determining the primarily local aspects of land use and scenic issues."

Under the terms of the foregoing statutory language the Commission would expect to develop regulations designed to encourage comment by one or more responsible agencies in each case and to permit the treatment of a written report as evidence in the proceeding much as we now treat reports by federal and state agencies in hydroelectric license cases under art I of the Power Act and the Fish and Wildlife Coordination Act. On the other hand, the Commission would still be in a position to resolve disputes among two or more agencies in one or more states (such as differences of opinion between the public utilities commission and the zoning board) and to reconcile local land use interests with the interstate interest that commerce in electric energy proceed efficiently and at a cost which is reasonably apportioned among all interested parties.

Should the law require a "common carrier" wheeling condition?

S. 1472 provides, as one of the conditions upon which all certificates would be granted, that excess capacity of the certificated line be made available to others on a "common carrier" basis.[18] The Commission believes that this is not the best way of insuring that the benefits of new EHV construction are equitably distributed. Under S. 2140, the Commission could insert in a certificate conditions specifically tailored to the needs of the case and a wheeling condition would very likely be appropriate in some cases. The Commission has imposed wheeling conditions before, under Part I of the Federal Power Act, and its actions have been upheld by the Courts.[19] But this type of condition is not appropriate in every case. There is no doubt in my mind that the Commission could act more efficiently to protect the public interest if it were free to choose among methods of guaranteeing participation in the projects it would certificate to all whose participation would be in the public interest. In some cases, for example, joint construction and ownership of a line might be a better solution than "common carrier" status imposed by statute. In others, there may be no other person who can profitably use the line's extra capacity. Under such circumstances, it seems wiser to allow the type and degree of participation by outside parties to be determined as the facts of the case dictate.

Should the law apply to all EHV transmission lines?

One of the most advantageous features of S. 2140 (which it shares with S. 2139) is that it applies to every line meeting the jurisdictional tests, rather than excluding those built by governmental bodies. As I have already stated, one of the primary benefits of these legislative proposals is that they provide a forum for the resolution of conflicting interests in and demands for the use of land. Whether the interest to be served by holding a hearings on such issues and attempting to hammer out a satisfactory solution is the interest of conservationists in maintaining natural outdoor beauty or wildlife habitats, of homeowners in preserving a residential neighborhood, or of sportsmen in protecting a recreationally valuable area, there is no reason why a Federal or state agency, municipalities or REA-financed cooperative, should be any less bound to respect

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[18] The original Moss-Engle bill (S. 3432, 87th Congress) did not contain this provision which was added in the 88th Congress version (S. 350, 88th Congress).

[19] *Federal Power Commission* v. *Idaho Power Co.*, 344 U.S. 17 (1952); *Idaho Power Co.* v. *F.P.C.*, 346 F. 2d 956 (CA 9, 1965).

it than an investor-owned corporation. Nor does it make sense, in my judgment, to rely exclusively on the Congressional appropriations process to provide such regulation of federally-financed agencies. In addition, as the process of interconnection and coordination of our bulk power supply facilities goes forward, there will be an increasing number of interconnections between public and private systems. As the Northeast blackout of November 9, 1965 proved, a power network like a chain, is no stronger than its weakest link. It seems essential, therefore, to extend the stimulus to enhanced reliability which the certification program can achieve to all the lines that will contribute to the interconnected network—not just to those that happen to be owned by a private corporation.

It might be argued that Congress, in its exercise of the appropriation power, can insure that Federally-owned transmission lines will be safe, reliable, economical, and only minimally detrimental to the landscape; and that EHV legislation is needed for non-federal lines because, so it is argued, no agency performs similar functions with respect to non-federal lines. It seems to me that this argument misconceives the kinds of regulation to which privately-owned utilities are subject and the nature of the appropriation process. While Congress, of course, can consider a wide range of issues in dealing with appropriation matters, the regulatory function of the appropriations process is better analogized to the action of a utility commission in passing an application for authority to issue securties to raise capital—where the primary issue is whether the benefits expected justify the expenditure proposed—than to the certification of projects. This "benefits vs. costs" analysis, as part of the regulation of utility security issuances, is performed by the Federal Power Commission for those jurisdictional public utilities not exempted by section 204(f) of the Federal Power Act; and these last, as well as many of those not exempted, are regulated in the same fashion by state commission. Those utilities that are members of holding company systems are also regulated by the Securities and Exchange Commission under the Public Utility Holding Company Act.

Thus, non-Federal projects are already subject to a type of regulation analogous to that provided by the appropriation mechanism, and would continue to be subject to such regulation. Similarly, federal projects would, of course, continue to be subject to Congressional and Presidential sanctioning through the budget and appropriations process. But neither this process nor state and federal securities regulation of private utilities (nor the R.E.A. loan procedures for cooperatives) can fully substitute for a comprehensive certificate statute which makes one agency responsible for a thorough review of all plans for facilities to be operated as parts of the interstate network. Thus, the fact that Congress also passes upon the federally-owned lines alone does not support a distinction between Federal and non-Federal projects so far as certification is concerned.

Should EHV transmission lines crossing Federal lands also be subject to regulation by the Land Management Agency?

At present, the Departments responsible for the management of federal lands and reservations administer a set of rules for the granting of right-of-way over these areas. These rules, which go beyond the protection of government land and affect the actual conduct of utility business, were formulated to provide some degree of regulation in the absence of clear Congressional action to formulate national electric transmission policy. If the Federal Power Commission is given primary responsibility for that transmission policy, it is logical and necessary that the land-management agencies devote their attention to protection of these properties, and that unnecessary dual regulation not be continued. Consequently, we urge that S. 2140 be modified so as to state that transmission line certificates shall contain such reasonable conditions relating to land use as the department or agency managing the lands over which the line would pass may develop. This could be achieved by inserting the following sentence at the end of subsection (e), page 4, line 11:

"A certificate authorizing the construction and operation of extra high voltage facilities located partly or wholly within the lands or reservations of the United States shall contain such reasonable terms and conditions relating to land use as may be developed by the department or agency managing those lands or reservations."

Under such a provision, the Congress would consolidate the economic and engineering regulation function in the Federal Power Commission. The Departments of Agriculture and the Interior would, of course, be permitted to appear as intervenors in the certificate proceedings to protect their interest in the generation, transmission and distribution of energy.

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Abandonment regulations

One additional feature of S. 2140 deserves mention. There is a subsection requiring that no public utility abandon or curtail any service without obtaining the approval of the Commission, which would be granted if a hearing established that abandonment or curtailment was consistent with the public interest. The Commission has recommended this legislation separately, as an amendment to section 202 of the Federal Power Act. As interconnection expands across state lines, it becomes increasingly important that distributors and other customers receiving power over these large lines be assured that continuity of service—beyond the term of the existing contract—will be available on fair and reasonable terms. Otherwise, they will be understandably reluctant to enter into wholesale power arrangements with the large systems, despite the many advantages that such arrangements offer. Section 205 of the Federal Power Act offers some protection to the small system, since it has been held that an abandonment constitutes a change in rate schedule under that section. *Pennsylvania Water & Power Co.* v. *Federal Power Commission*, 343 U.S. 414 (1952). But such a change can, under section 205, be suspended by the Commission for only five months; if at the end of that time the Commission has not acted, the change may be made effective. The impact of such a situation on the small system dependent for its power supply on a larger neighbor would, of course, be very serious. The Commission, therefore, should have authority directly to pass upon such proposed abandonments in order to preserve the ability of such systems to maintain service.

Grant of eminent domain power

Another useful feature of S. 2140 (and S. 2139) is the grant of eminent domain powers exercisable in the district courts to utilities whose projects have been certificated. As I have explained, many states do give adequate condemnation powers to public utilities; but a few give none at all and a large number restrict these powers in such a way as to hamper EHV construction. In some states, for example, there are limitations on the width of right-of-way that can be taken—limits which are not adequate for safe operation at very high voltages. In other states, foreign corporations are not permitted to use the eminent domain procedure, and must strike the best bargains they can with property owners along the route of the proposed line. In view of the increasing resistance to construction of overhead lines in many areas, it will be helpful indeed if the utility—once its project has passed the tests of public convenience and necessity and has been certificated—can be sure of obtaining an economical and direct right-of-way.

Proposed effective date

We believe that when Congress enacts EHV legislation it will be well advised to provide some reasonable period of months before the legislation becomes effective to permit an efficient transition to certificate regulation. During this period the Commission would develop regulations, organize an appropriate staff organization, and employ consultative techiques to familiarize itself with the immediate developments in EHV planning and design for the future. We recommend that the certificate provisions not apply to lines already under construction at the effective date of the statute but not yet energized. We think this change would also make for a smoother administrative transition to regulation than the present provision of S. 2140.

CONCLUSION

The electric utility industry doubles its capacity every ten years. This dynamic growth and our capacity to meet it rests upon accelerated technological progress which, in turn, may impinge upon established social and economic values and holds the key to great opportunities for use or misuse. By studying the implications of the new extra-high-voltage transmission technology the Senate Commerce Committee undertakes a signal public service for America: to fashion national power policies adequate to the challenges of rapidly increasing demands for electrical energy, vastly advanced power technology and an awakened public consciousness of facilities appearance.

APPENDIX A

DETAILED ANALYSIS OF S. 1472, S. 2139 AND S. 2140—89TH CONGRESS

All three of these proposed amendments to section 202 of the Federal Power Act would prohibit certain acts in connection with EHV lines unless certain

conditions were met. S. 2139 applies to construction and operation or maintenance of such lines, while the other two bills declare that no person shall engage in the transmission of electricity by means of such lines, or undertake their construction, extension, or modification, or incorporate construction features or equipment capable of or designed for future conversion to operate at EHV levels, or operate or maintain such facilities, unless the act is complied with.

S. 2139 does not limit itself to transmission of electric energy in interstate commerce; S. 1472 and S. 2140 both concern themselves only with transmission of electric energy "in interstate commerce subject to the jurisdiction of the Commission".

The three bills defined differently the parties subject to these prohibitions. S. 1472 applies to "persons" without modifying the meaning of that term as it is used in the Federal Power Act as a whole. S. 2140 also refers to "persons", but adds a special definition of that term whereby it includes "persons" and "municipalities" as defined in section 3 of the Federal Power Act, and departments, agencies, and instrumentalities of the United States. S. 2139 does not use the term "persons", but contains a provision stating that it is applicable to all parties enumerated in section 201(f) of the Federal Power Act[1] as well as to all those who would otherwise be covered.

The acts covered by the prohibitory portions of each of these bills become lawful upon the meeting of certain requirements. S. 2139 requires that anyone proposing to build facilities of the type described in the prohibitory clause shall file with the Commission such information as it may require in order to determine whether the proposal would be in the public interest. Notice of the filing would be served on such interested parties as the Commission directed; and any such interested party would have the opportunity to comment on the filing. Within 90 days after acceptance of the filing the Commission would be required either to approve the proposed construction if it appeared best adapted to serve the public interest; or if there were reason to believe that it was not best adapted to serve the public interest, the Commission would issue an order withholding approval and summarizing its reason for doing so. In the latter case, the Commission would be required to hold conferences, jointly or separately, with the applicant and other interested parties to consider revised or alternative plans which would be best adapted to serve the public interest, and to encourage the filing of such revised or alternative plans by the applicant or others. The Commission could in its discretion hold hearings on the original or supplementary filings. Within twelve months after the original filing the Commission would be required either to approve the proposed construction (as proposed or as amended) if it appears best adapted to serve the public interest or to recommend specific modifications if in its judgment the project, so modified, would be better adapted to serve the public interest. If the modifications are accepted, the project is to approved; if not, the construction would not be permitted to proceed for such period as the Commission might designate (but not over two years from the original filing) unless the proponent and the Commission sooner agree on a plan which the Commission finds will conform fully with the public interest. At the end of two years from the original filing, construction could proceed on the facilities described in the application or any amendment thereto.

S. 1472 and S. 2140 provide for a certificate of public convenience and necessity as a prerequisite to construction, engaging in transmission in interstate commerce, or performing any of the other acts set out in the prohibitory clauses of the bills. Under these bills, a certificate would be issued to any qualified applicant, covering all or part of his proposal, if it were found that he was able and willing properly to do the acts and perform the service proposed, and to conform to the Act and the Commission's rules thereunder. The proposed construction, extension, operation or maintenance, to be awarded a certificate, would have to be required by the present or future public convenience and necessity.

The two bills which provide a certificate mechanism also provide, in practically identical language, for the granting of "grandfather" certificates to existing lines. Any person who, or whose predecessor, was on the effective date of

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[1] That is, "the United States, a State or any political subdivision of a State, or any agency, authority, or instrumentality of any one or more of the foregoing, or any corporation which is wholly owned, directly or indirectly, by any one or more of the foregoing, or any officer, agency, or employee of any of the foregoing acting as such in the course of his official duty * * *".

the act engaged in good faith, and continued to be engaged, in transmission at the jurisdictional voltage, or in the operation or maintenance of facilities therefor, over the route or within the area contemplated by the application, and who files his application within 90 days of such effective date, shall be entitled to a certificate without presenting proof that the public convenience and necessity will be served by the operations described in the application. Pending the grant of such a certificate, continued operation would be lawful. S. 2139 would apply only to lines construction of which was commenced after the effective date of the act.

Under both S. 1472 and S. 2140, the Commission would have the power to attach to a certificate such reasonable terms and conditions as the public convenience and necessity might require. In addition to this provision, S. 1472 would require that every such certificate be subject to the condition that capacity of the certificated lines over and above that need for transmission of energy in the ordinary scope of the applicant's business be made available to others on a "common carrier" basis for the transmission of other energy. S. 2140 does not contain this provision, but does require that a certificate could not be granted unless the proposal were found consistent with a comprehensive plan for use and development of the power resources of the area, for the purpose of making electricity available reliably, in ample amounts, and on fair and reasonable terms; and that it include (to the extent financially feasible) provision for sufficient capacity to meet all the needs of the affected area for transmission (of both privately and publicly-generated power) including reasonable capacity for expansion to meet future needs.

The term "extra high voltage facilities" is defined in S. 2139 as lines and associated facilities designed for or capable of operation at a nominal voltage (between phases for alternating current; between poles for direct current) higher than 200 kilovolts. S. 2140 also sets the level of extra high voltage as "in excess of 200 kilovolts". S. 1472 defines the jurisdictional voltage as 230 or more kilovolts.

S. 1472 contains no provision for the exercise of Federal eminent domain. The other two bills provide that when a project has received a certificate, or the Commission's approval in the case of S. 2139, and the builder cannot acquire a right-of-way by contract or is unable to agree with the owner on compensation for right-of-way land, he may exercise the right of eminent domain in the Federal District Court for the District in which the property in question is located. Both S. 2139 and S. 2140 provide for the declaration of taking procedure.

Abandonments and curtailments of service are regulated by S. 1472 and S. 2140, but not by S. 2139. The provisions of the first two bills are identical, and require that no public utility shall abandon or curtail any service subject to Commission jurisdiction, or accomplish the same result by abandonment of facilities, without the Commission's approval. Such approval would be granted after hearing if the Commission found that the abandonment or curtailment would be consistent with the public interest.

S. 2139 contains a provision requiring that construction and operation of EHV facilities over lands and reservations of the United States be subject to such reasonable terms and conditions as the department or agency responsible for the land in question might adopt (to the extent authorized by law) and the Commission by written order approve. This requirement would be in addition to all others imposed by the bill.

APPENDIX B

Tabular summary of certification laws in the several States

State	Any certificate or equivalent required? [1]	Exceptions, town already served?	Contiguous territory not served by other utility?	Ordinary extensions (usual course of business)?	Other	Coverage, privately owned utilities?	Municipalities	Cooperatives
Alabama	Yes	No	No	Yes		Yes	No	No.
Alaska	No [2]							
Arizona	Yes	Yes	Yes	Yes		Yes	(?)	(?).
Arkansas	(3)	Yes	No	Yes		Yes	No	(?).
California	Yes	Yes	Yes	Yes		Yes	No	Yes.
Colorado	Yes	Yes	Yes	Yes		Yes	Yes	No.
Connecticut	No							
Delaware	Yes	Yes	Yes	No		Yes	No	Yes.
District of Columbia	Yes	No	No	No		Yes		No.
Florida	No							
Georgia	No							
Hawaii	No							
Idaho	Yes	Yes	Yes	Yes	(4)	Yes	Yes	No.
Illinois	Yes	No	No	No	(5)	Yes	No	Yes.
Indiana	(6)	No	No	No		Yes	No	(7).
Iowa	(8)					Yes	(?)	(?).
Kansas	Yes	No	No	No		Yes	No	Yes.
Kentucky	Yes	No	No	Yes		Yes	No	Yes.
Louisiana	(6)	No	No	No		Yes	Yes [9]	Yes.
Maine	(6)	No	No	No		Yes	(?)	(?).
Maryland	(10)	No	No	No		No	Yes	No.
Massachusetts	Yes	No	No	No		Yes	(?)	(?).
Michigan	(6)	No	No	No		Yes	No	(?).
Minnesota	No							
Mississippi	Yes	No	No	No		Yes	(?)	Yes.
Missouri	Yes	No	No	No		Yes	No	Yes.
Montana	No							
Nebraska	Yes	No	No	No		Yes	Yes	Yes.
Nevada	Yes	Yes	Yes	No		Yes	No	Yes.
New Hampshire	(11)		No	No		Yes	Yes, outside corporation limit.	Yes.
New Jersey	No							
New Mexico	Yes	Yes	Yes	Yes		Yes	(12)	No.
New York	Yes	No	No	No		Yes	(13)	Yes.
North Carolina	Yes	No	Yes	Yes		Yes	No	(14).
North Dakota	Yes	No	No	No		Yes	No	No.
Ohio	No							
Oklahoma	No							

See footnotes at end of table.

Tabular summary of certification laws in the several States—Continued

State	Any certificate or equivalent required? [1]	Exceptions, town already served?	Contiguous territory not served by other utility?	Ordinary extensions (usual course of business)?	Other	Coverage, privately owned utilities?	Municipalities	Cooperatives
Oregon	Yes [15]	No	No	No		Yes	Yes	Yes.
Pennsylvania	Yes	No	No	No		Yes	No	No.
Rhode Island	Yes [6] [16]	No	No	No		Yes	Yes	Yes.
South Carolina	Yes	Yes	Yes	Yes		Yes	Yes, outside corporation limit.	No.
South Dakota	No			No				
Tennessee	([8])	Yes	Yes	No		Yes	No	([14]).
Texas	No				([17])			
Utah	Yes	Yes	Yes	Yes		Yes	No	Yes.
Vermont	([18])					Yes	Yes	Yes.
Virginia	Yes	No	No	Yes [19]		Yes	No	No.
Washington	No							
West Virginia	Yes	No	No	Yes		Yes	Yes	Yes.
Wisconsin [20]	([6])	No	No	No		Yes	Yes	([14]).
Wyoming	Yes	Yes	Yes	No	([21])	Yes	No	([22]).

[1] Certificate or equivalent is considered to mean a requirement that the entire line (not, for example, only that part of it that crosses public roads) be submitted for general examination as to whether it serves the public convenience and necessity.

[2] However, any construction that might require a rate adjustment must be reported to the commission, which may exclude it from the rate base.

[3] Required where area to be served is already served by a cooperative.

[4] Power companies may increase capacity of existing plants or develop new generating plants without certificate.

[5] No certificate required if in substitution for or addition or extension to existing plant.

[6] Required where area to be served is served by another utility.

[7] Rural electric membership corporations are subject to a more stringent requirement than other electric entities, as they must obtain declarations of public convenience and necessity before undertaking any construction.

[8] Franchise from State commerce commission required where line will cross public roads; it has been held that petitioner must show necessity of the line for the proposed use.

[9] Except the parish of Orleans.

[10] Required for municipalities acting for other than municipal purposes.

[11] Permission required before building facilities in any town in which utility is not already operating, or before serving an unserved customer who is located closer to another utility.

[12] A municipality may voluntarily place itself under the jurisdiction of the Commission.

[13] Requirement applies to municipalities acting for other than municipal purposes. Projects of the Power Authority of the State of New York are in no way subject to Public Service Commission jurisdiction.

[14] Certificate not required of cooperatives organized under laws of this State.

[15] Not required if project has received permit from another agency of Oregon or from the United States.

[16] Not required if service is to another utility or power or transmission company.

[17] Not required for substitute or additional facilities in territory already served. There is an additional requirement of certification for any line extended into Tennessee to deliver power generated out of State.

[18] Public policy against unnecessary duplication. Utility may not serve a customer already served by, or located closer to, another utility, unless it is found that the other utility's service is or will be inadequate or its rates unreasonable.

[19] Not required for ordinary extensions in usual course of business within territory in which utility is authorized to operate.

[20] Wisconsin commission is empowered by statute to promulgate broad rules on this subject and to require certificates of public convenience and necessity.

[21] Not required for extensions into territory already served. In addition, power companies may without certificate increase the capacity of existing plants.

[22] A mutual benefit electric corporation may be a public utility, and hence subject to the certification requirement.

NOTE.—This table deals only with statutes creating certification jurisdiction. Some control over new facilities may be exercised by the regulation of securities issuances, but this matter is not covered by the table.

Source: Office of the General Counsel, Federal Power Commission.

Mr. WHITE. May I also point out, Madam Chairman, that Commissioner O'Connor, who has a somewhat different position from the other members of the Commission, has a statement that I believe he, too, would like to have incorporated in the record, and Commissioner Bagge has a letter to the chairman of the committee explaining his position and how he has come to it. There has been a shift in his position since last year, when he communicated with the committee earlier.

Senator NEUBERGER. We have copies of these and they will be inserted in the record.

(The documents referred to follow:)

SEPARATE STATEMENT OF COMMISSIONER LAWRENCE J. O'CONNOR, JR. ON EXTRA HIGH VOLTAGE TRANSMISSION LEGISLATION SUPPORTING S. 2139 (89TH CONGRESS)

The present trend of extra high voltage transmission lines appears to be developing in the public interest; certainly it discloses no general pattern of abuses by the participating utilities which cannot be resolved short of compulsory certificate legislation. There is a strong national interest in the EHV trend which should be facilitated and encouraged. I also agree that the development of EHV construction should proceed in conultation with all affected interests, and that the Federal Government should have a voice in this development. Moreover, I agree with my colleagues that the factors of reliability, sound interstate system designs, economic evaluation of projects, and esthetics are all properly a matter for public discussion by the Federal Government and other interested federal and state agencies with the managements who propose an EHV project. I disagree with my colleagues' evaluation of the best means for achieving these ends.

The best means now available, in my judgment, are presented by S. 2139, which fully preserves the ultimate responsibility of utility company managements and assures that the most competent decisions will be reached in light of public and Government comment, but without dictation by the Federal Government. In my judgment, S. 2140, which my colleagues support would defeat rather than promote the very goals which we agree in seeking.

Enactment of S. 2140 would surely lead to serious delays in the construction of EHV projects. One need only to look to our certificate experience under Section 7 of the Natural Gas Act to see that important pipeline services have been delayed for years, while various adversary parties, some of whom have a vested interest in delay for delay's sake, battle through administrative hearings and judicial review proceedings. The pluralistic composition of the electric utility industry almost assures this type of delay.

The Commission now has a large staff of engineers, accountants, lawyers and other experts, built up over the years, processing gas certificate cases, and yet, in some contested cases, we have serious delays; how could we expect to avoid more protracted delays in EHV certification if we propose to embark upon such a program with our present limited staff? It will take years to assemble and train the staff necessary to handle our responsibilities under any of the proposed legislation.

The goal of reliability which I unequivocally support generally demands additional EHV construction at the earlier possible date. Thus our report to the President on December 6, 1965, in connection with the Northeast Power Failure, urged "an acceleration of the present trend towards stronger transmission networks * * * and stronger inter-connections." Enactment of S. 2140, by delaying the construction of planned, inter-connection facilities, will retard rather than promote the goal of reliability.

The common interest and public interest in reliability are so great that it seems inconceivable that nay utility would ignore a Commission directive, even if it be based on voluntary procedures alone, to desist from unreliable conduct. I am confident that if ever the case arises where the Federal Power Commission actually concludes that a proposed utility plan is unreliable from a service standpoint the utility would promptly amend its plan to conform to the stable design urged by the Federal Power Commission. The approach of S. 2139 of operating through consultation, would be perfectly adequate in the reliability sphere and would, in my judgment, perhaps be more effective than S. 2140 since under

consultation a utility would fear the adverse public relations of a Commission determination that the utility plan would be unreliable, whereas under S. 2140 the utility might be tempted instead to litigate the Commission's determination.

The economic, coordination and esthetic factors mentioned by my colleagues are amongst the most difficult and vexing problems confronting the public utility industry today. These problems should certainly be thrashed out in the open, a course which S. 2139 would encouarge. We have no experience, however, to justify faith in our competence finally to resolve these problems effectively. We can only be confident that attempts to achieve an answer from Washington, D.C. will protract the process by which EHV lines, admittedly essential to our economy, are constructed.

All of the suggestions which my colleagues make for requiring an early and detailed disclosure of EHV plans could be achieved as well under S. 2139 as under S. 2140. Indeed, many of these objectives could be achieved under existing law without nay further legislation. Thus, the broad voluntary coordination responsibility entrusted to the Commission under Subsection 202(a) of the Act, and the broad informational responsibility entrusted to the Commission by Section 311 of the Federal Power Act empowers us to develop mechanisms for full disclosure of EHV plans and for consultation in their development. We have never exercised these potential sources of federal responsibility and we have never tried to bring a federal interest to bear through these means. If we had done so, and the utilities had not responded in a constructive fashion there might be justification for a compulsory certification bill. If Congress enacts S. 2139 and the utilities fail to respond in a constructive manner to its consultative provisions, it might be time to enact an inflexible compulsory certification bill. But where the Commission has never really tried to ascertain the effectiveness of its voluntary consultation and information powers, I cannot see any justification for Congress to forego experimentation with the consultative approach, or any demonstration of the need for a compulsory bill. Both the compulsory certification proposals of S. 1472 and S. 2140 are plainly premature nad should not be considered, with all the delays to the public interest which they would create, until the consultative approach has been fully tested.

Since even the general consultative approach of S. 2139 involves a substantial involvement by the Federal Government in management planning. I can agree that we should be reluctant to embark upon it without a specific Congressional mandate. I, therefore, support S. 2139 which would direct us to pursue the consultative approach (but would amend the bill to limit to to EHV lines in interstate commerce).

FEDERAL POWER COMMISSION,
OFFICE OF COMMISSIONER,
Washington, July 26, 1966.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR SENATOR MAGNUSON: On November 22, 1965, then Chairman Joseph C. Swidler, transmitted my statement endorsing S. 2139 concerning Federal Power Commission jurisdiction over extra-high voltage transmission lines. He indicated that a majority of the Commission then favored enactment of S. 2139, but pointed out that the Commission's extra-high voltage proposal was developed before the Northeast power failure of November 9, 1965.

My endorsement of legislation in this area was based upon a recognition that extra-high voltage technology: (1) will have a profound impact on the character and configuration of the electric utility industry; (2) will enhance the interstate and inter-regional nature of generation, transmission and distribution in the electric utility industry, and (3) will inevitably involve a broader range of social values and economic interests than those presently affected by more orthodox transmission facilities. These circumstances appeared to me to justify an expanded responsibility for the Federal government but did not justify control through the conventional licensing and certification procedures.

My endorsement of S. 2139 was based upon a concern regarding the delays implicit in the administration of a conventional certification statute. It appeared to me that the new EHV technology provided a unique opportunity to experiment with a new regulatory technique—one based upon cooperation between government and industry rather than coercion. Hence, I favored the consultative approach implicit in S. 2139.

My participation in the Commission's investigation of the Northeast power failure of November 9, 1965, and of a number of other power failures which have occurred throughout the Nation since that time, has prompted me to re-evaluate these legislative proposals in the light of the implications of these power failures. I am now convinced that the quality and security of electric service is a problem of national concern. I am now convinced, furthermore, that the extra-high voltage legislative proposals encompass the dimension of reliability and that the quality and security of electric service is one of the values which the Commission would be obliged to protect under either of the alternative proposals.

Having acknowledged that reliability of electric service is a problem of national concern, and having recognized, furthermore, that the extra-high voltage legislative proposals encompass the dimension of reliability, the choice between S. 2139 and S. 2140 depends, in my view, upon whether the social values implicit in reliability of service can adequately be protected by employing a consultative form of regulation and relying upon voluntary compliance. Reliability of utility service, much like utility safety regulation, does not, in my opinion, lend itself to the principle of voluntarism. The social values involved in both of these areas are too broad for regulation to temporize with the interests of the public or to experiment with a new regulatory technique. Regulation in these two areas, to be effective at all, must be precise and definitive. Compliance with the standards evolved by regulation in these areas cannot be voluntary.

Having concluded that reliability of electric service is so vital to the national interest that compliance with the standards evolved by regulation cannot be voluntary, I am obliged, therefore, to change my position and to endorse S. 2140. My endorsement is not without qualification, however. I endorse S. 2140 upon the following conditions:

1. That the bill be enacted in its full present scope to encompass all extra-high voltage transmission lines irrespective of whether they are investor, cooperatively or publicly owned. The national concern for reliability of service extends to all EHV transmission lines irrespective of the form of their ownership. Because of the extent of interconnection and coordination between investor and publicly owned facilities, it would, in my opinion, be irrational to exclude from the application of the bill any segment of the electric power industry. It is for this reason that I affirmatively oppose S. 1472.

2. That the bill be amended to give recognition to the fact that the protection of aesthetic values, i.e., issues involving land use and preservation of natural beauty are primarily of local concern. I suggest that the bill be amended to give prima facie weight, in any proceeding before the Commission, to the determination of appropriate state authorities regarding issues of this character. In order that such a determination, or the failure to make a determination, shall not provide a basis for effectively precluding the construction and operation of extra-high voltage transmission lines, appropriate provision should be made for certification in the absence of state action or in the event that the conditions prescribed by state authorities impose an unreasonable burden upon interestate commerce.

3. That the bill be amended to expressly provide for the use of consultative techniques whenever possible in order to avoid the delays incident to a formal hearing on a record. In this manner, it appears to me, the values which S. 2139 seeks to achieve, may be adopted within the framework of the conventional certificate statute.

Respectfully,

CARL E. BAGGE, *Commissioner.*

Mr. WHITE. The first portion of the prepared statement, Madam Chairman, is our effort to describe the importance of and the benefits that come from extra high voltage tranmission lines, from the interconnection of systems, and from the coordination and the locking together, if you will, of the systems in this country.

Senator Metcalf has already alluded to that and I think, in a discussion before this commitee, one can start from the assumption that this is indeed a most useful development in technology.

The United States and some of the other advanced countries of the world have come forward with improvements in technology that clearly hold great promise. We have already seen the benefits in the form of

lower cost of power and lower rates, but more important are the benefits that have come from one system's being able to depend and rely upon the surplus capacity of neighboring systems.

We are of one mind, I think, within the industry, and within the various government agencies that deal with this as to these benefits; and I think that our specific discussion could be most helpful if we focus on how best to achieve this objective.

May I say at the outset, that it would be unfair to leave the impression that interconnection and coordination are not being done today. Utility systems do, indeed, strive to achieve these objectives. As you well know, coming from the State of Oregon, the Pacific coast intertie, which has been worked out with privately owned utilities, with publicly owned utilities, with cooperatively owned utilities and with the Federal Government, is an excellent illustration of the type of cooperation and coordination that can bring benefits to the people of the Northwest and the Southwest as well.

So, we are really talking about the most effective ways to do the job. This, I think, does take us to the point in the prepared statement at page 25 where we begin to focus on the various alternatives that are available and to discuss in some detail the various legislative proposals that are before the committee.

If there are no questions at this point, I will begin at page 25.

Senator NEUBERGER. All right.

Mr. WHITE. All the economic, social, and engineering factors indicate that EHV transmission should, and will, become an increasingly important part of our electric industry's planning and building. The question with which we are faced here today is whether this EHV planning and building should be under governmental review.

I believe, as I think most of us do, that a pluralistic power industry, with independent yet cooperating units under many types of control—private, cooperative, municipal, and Federal—is the best type of system we could have. But such a coordinated pluralistic system can grow and function to its full potential only if it does so in an orderly way. The nationwide coordination of our electric power systems must develop gradually, from local interconnections through larger and larger regional and interregional interconnections. It will do so under the aegis of numerous different entities, private and governmental. The task facing the power industry is to assure that this development proceeds in such a way that each new addition is as useful as possible to the interconnections of which it is—or will be—a part; that facilities are not needlessly duplicated; that new construction is planned with an eye to future coordination as well as to the needs of the present; that the benefits of our increasing technological capability are realized as widely as possible throughout the industry; and that systems which by economic and engineering logic should be coordinated are not excluded by their neighbors. With foresight of this kind, our power industry can continue to improve in economy, reliability, and social responsibility.

One of the traditional functions of a regulatory commission—State or Federal—is to prevent duplication of facilities where it would be economically wasteful. Indeed, the whole concept of a public utility as a business somehow different from the ordinary competitive industrial concern depends primarily on the idea that the grant of

a regulated monopoly can, by avoiding the construction of two or more plants to perform identical functions, result in better and cheaper service for the community. The electric industry has, for many years, had particular difficulty in avoiding duplication not justified by economic realities, caused in part by the rivalry between its public and private and cooperative sectors and, in some instances, by ignorance of the plans or capabilities of neighboring systems.

At that point, let me interpolate. The Federal Power Commission has worked very closely with all segments of the industry in the development of the national power survey, beginning in 1962 and ending in the latter part of 1964. That high degree of cooperation has continued. The Commission has undertaken an up dating of the national power survey and has enjoyed an extremely high level of cooperation from all of the groups that compose this country's power industry.

We have absolutely no reason to believe that cooperation will not continue and certainly I know that it is the Commission's desire that it do so. We are very optimistic and encouraged by the readiness of these groups to cooperate with us.

In any event, whenever there is construction of duplicating or even partially duplicating lines, the result is excessive expense, in money, labor, and land which perhaps could have been avoided and which, once incurred, may not result in the best possible service. If, on the other hand, certification of EHV projects were the rule, there would be a forum where the intraindustry differences which may prevent adoption of the best plan could be resolved. The knowledge that a procedure of this kind would be required might itself provide the impetus for systems to consider possibilities for cooperation that previously seemed impossible.

Again, if I might interpolate, I have already alluded to the west coast intertie, and there are other illustrations where these arrangements have been possible and have been worked out without benefit of this legislation. But I think that with the type of procedure provided for under S. 2140 we will find the industry far better equipped to do an even better job than is being done today.

S. 2140 would create a clearinghouse for information, and so assist the industry in its planning by making clear to its members what their neighbor utilities intend for the future.

S. 2139 would also provide this clearinghouse, although we will subsequently indicate the reasons for the majority preference for S. 2140.

These functions, are, of course, of particular importance with the growth of interconnection.

If each local electric system were still isolated from its neighbors, a certificate of public convenience and necessity could rest on the relatively simple findings that there was a need for service and that the proposal was adequate and feasible. But with 97 percent of the industry interconnected to some degree, and with more and stronger interties being built and planned each year, the effect of a particular transmission line project may be felt over much of the Nation. In addition, each project must be considered from the point of view of its impact on our Nation's power system as it will be 5, 10, or 20 years in the future. Under such circumstances, it is not too much to say that

a national forum for the bringing together of affected parties, the discovery of all the relevant facts, and the development of the project best suited to the present and future public interest is a practical necessity.

The idea of a forum, where all aspects of a new transmission line proposal can be thoroughly explored, has another attractive feature. It can stimulate the company, city, or government agency planning the project to itself consider every phase of its design and construction, and it can heighten for the top echelons in management their sense of a direct responsibility for justifying every aspect of the proposal in the public interest. Focusing public attention on EHV projects can help promote these desirable results. For example, the public is entitled to assurance that stability studies have been made of the potential impact of credible, if unlikely, events on the proposed transmission systems and that a professional judgment vouches for the stability of the design. The requirement of an agency proceeding, where those responsible for a proposal must justify each aspect of it on its own merits, is in my view the best way to insure this kind of thoughtful and well-coordinated planning.

We have spoken so far of the benefits of economy and reliable service which we believe the proposed legislation would bring about. These have always been primary concerns in any utility service, but there is another consideration, which has more recently become a matter of major importance to the public. This is the social issue of land use, a matter that the Chairman is especially interested in.

Conservationists are concerned to preserve natural beauty or wildlife habitats, while property owners may present a case against the invasion of residential areas by transmission lines. Some projects might threaten areas of historic interest or special recreational attractiveness. The utility industry has, to its credit, made outstanding efforts to reconcile its own needs for more land and new plant with demands of the public at large for preservation of the landscape. But here, as in the case of electric service itself, we ought not to be satisfied with less than the best solution available. Congress has, in a different sector of the electric industry, recognized the problem and given the Commission power to deal with it. Section 10(a) of the Federal Power Act was amended in 1935 to make the recreational possibilities of hydroelectric sites an explicit issue in licensing proceedings. The Commission has accepted that responsibility and, in my opinion, is discharging it well. While it has actually denied licensing of a project, though feasible and beneficial, on this ground, the Commission has generally taken pains to reconcile the need for waterpower with the myriad demands of recreation, environmental beauty, and wildlife conservation, which the statute directs it to consider. Many of these same considerations are as valid for transmission line projects as for hydroelectric dams, and the Commission has early used its powers under part I of the act (limited to primary project lines) to require esthetic treatment of transmission lines. The Federal Power Act presently gives the Commission authority over the primary project lines of hydroprojects that are under the jurisdiction of the Commission. Such factors are as much a part of the public convenience and necessity as is the need for ample supplies of power at reasonable cost.

The next point that is really important, if we can accept the premise up to this point, is why the review should be performed by the Federal Power Commission. It is appropriate that the review function contemplated by these bills be performed by the Federal Power Commission, the Federal agency entrusted by the Congress with Federal regulatory and informational responsibilities for the electric utility industry. The FPC is an independent regulatory commission. We manage no powerlines or electric systems. The Commission is in no sense a competitor of the systems it would be asked to review under these bills.

One of the important byproducts of the Commission's national power survey was that it brought together on a joint project all of the diverse segments of the industry in an atmosphere which was conducive to cooperation. I believe it is fair to say that the Commission presently enjoys to a high degree the confidence of all sectors of the industry. Moreover, our increasing attention to the esthetic quality of the environment should also reassure those who are concerned with the protection of our natural resources and the promotion of a higher quality of living. The FPC would appear to be the logical agency to which to entrust the certification of extra-high-voltage transmission lines.

The next section deals with the single difference of opinion within the FPC itself. All five of us support the concept of a role for the Federal Government. Commissioner O'Connor favors the consultative approach of S. 2139, as his statement makes clear, and the remainder of the Commission supports S. 2140.

The central difference between these two bills is the incorporation in S. 2140 of the principle shared with S. 1472, introduced by Senator Metcalf, that no jurisdictional facility may be constructed without a certificate of public convenience and necessity. I would like to explain, therefore, why the Commission feels that this provision, admittedly more stringent than the "voluntary" approach of S. 2139, will protect the public interest more effectively.

First, it cannot be overemphasized that today every system depends not only on its own facilities but on those of its interconnected neighbors. It would probably cause no surprise if one were to point out that a single poorly designed or inadequate line on a large utility system can cause the collapse of service over its entire service area. And the fact that the same area might be served by the interconnected systems of several independent utilities would not change the physical phenomena of transient instability: the outage would be as extensive whether the lines involved were under one ownership or a dozen. When it comes to reliability of service, the public should not have to rely exclusively upon independent managements—regardless of their efficiency and their desire to provide their own customers the best possible service—voluntarily to consider the needs of a neighboring system, particularly when these systems are part of a different segment of the industry. By the same token, it is appropriate that the public through its Government should assume a share of the responsibility for the safety and reliability of interstate extra-high-voltage electric transmission systems. That point was never more thoroughly underscored than last November.

Another important benefit to be gained from the grant of compulsory powers such as are contemplated by S. 2140 is the assurance that small systems, regardless of the nature of their ownership, will be able to share in the benefits of interconnection.

At this point, I would like to mention the TVA nuclear plant referred to earlier. That plant will be a monster in the sense that it will produce a tremendous amount of power that a muncipality or a co-op or a small privately owned utility simply cannot duplicate. It will run to almost 2,200,000 kilowatts. The plant that has been ordered by Commonwealth Edison is 809 megawatts. In order to be able to get the benefits of the low-cost power produced in these tremendous installations, there must be a market for it; and a small utility, regardless of its ownership, simply can't on its own go out and build a facility of that character. It can, however, get some of the benefits of it; it can participate in it and in some of the pooling arrangements. This is really the problem that the industry and the Government agencies involved must focus on in the years ahead.

Under S. 2139, the Commission would have no real control over the design, capacity, and routing of the line, and it would be unable to help small systems, some of which may be in active competition with the entity proposing to build the new line, to share in the benefits possible from the new technology.

The Commission's experience under the voluntary, consultative coordination provisions of section 202(a) demonstrates that some systems—though fortunately not the industry as a whole—are apt to decline coordination proposals for strong relations with their neighbors. The pending legislation, however, would give these systems an opportunity to make their case for inclusion in the project from the very beginning—not as appendages, attached as an afterthought, and very likely at greater cost than if they had been designed into the original plans.

In the matter of esthetics the consultative approach could well prove particularly ineffective. Utilities are under a public obligation to minimize their costs and properly take great pride in their having done so. It is understandable, therefore, that they might sometimes resist proposals to spend funds on undergrounding or other appearance improvements. Under S. 2139, some applicants might consult for the statutory period, but go ahead as originally planned thereafter rather than submit to costly esthetic conditions.

In my judgment, it would often be unfair to the managements of the utilities to expect them to undergo substantial outlays at their customers' or stockholders' expense on the basis of informal consultations and voluntary response to public counsels, Settlements arrived at in formal proceedings can be justified to the customers and the board of directors. But it is somewhat more difficult to explain the basis for altering plans if a 2-year wait is all that is necessary before it can go forward.

Finally, I seriously question whether the Congress—as a matter of fundamental policy—would consider undertaking measures to promote and facilitate extra-high-voltage construction unless accompanied by a realistic and comprehensive regulatory program. In our view, the most effective way of accomplishing this is through compulsory certification. The consultative approach would merely give the appearance of regu-

lation without providing sufficient means for enforcing the public interest once it is determined.

The next item we discuss is precedents for the proposed certificate legisltation. Regulation of the type proposed in this bill is not a new idea. Not only has the experience of many States shown that it can work successfully without undue interference with the industry, but the Federal Power Act itself was, as orginially introduced, to have included a certificating power very similar to that we now propose. The original Wheeler-Rayburn bill, title II of which became parts II and III of the present Federal Power Act, included certificate jurisdiction over construction and abandonment of utility facilities. This provision was removed in committee without explanation, but the Senate report on the bill expressed the thought that it might be needed in the future:

> While it may ultimately be found desirable to adopt a provision of this kind, the committee is of the opinion that for the present there is no imminent danger of excessive extensions that would prove dangerous to consumers.

The electric industry has changed in many ways since 1935, and other interests than those of consumers must be considered as it changes and expands still further. Conservation and land use issues have arisen which frequently conflict with the economic interests of consumers. The need which Congress foresaw in 1935 is now a reality.

It may be instructive to look for a moment at certificate jurisdiction as it is already exercised by the Federal Power Commission. For nearly a quarter century, since the certificate requirement was made generally applicable in 1942, interstate natural gas pipelines have been required to obtain certificates of public convenience and necessity. This requirement has not interfered with the growth of the natural gas industry, at least if its expansion in the past 25 years is any index. On the contrary, the volumes of gas transported have increased steadily each year; and the percentage of gas produced which is marketed in interstate commerce (and, therefore, under Commission jurisdiction) has grown rapidly, this last figure having increased from 28 percent in 1938 to 58 percent in 1964. Between 1945 and 1964, natural gas transmission line mileage increased by 165 percent.

The vast majority of pipeline certificate cases are disposed of quickly. Unopposed applications, the largest category, are decided in an average of 62 days, from filing to final order. The few pipeline certificate proceedings which have achieved notoriety for their length of time have been competitive hearings, where two or more pipelines were seeking to serve a new market through mutually exclusive proposals. Electric utilities are more generally securely fixed in particular market areas, and for this reason there would probably be fewer such cases on the extra-high-voltage transmission docket. Besides, it is likely that many seemingly competitive proposals would, in fact, represent the efforts of different segments of the industry to achieve dominance in the affected area. As an engineering matter, the proposals might be nearly identical. The Commission could, in such cases, perform a valuable service by bringing the rivals together in cooperation on a project which would benefit both and might frequently serve the public interest better than the construction that either would or could have undertaken alone.

The Federal Communication Commission also administers a system of certificating lines for telephone, telegraph, and other common carrier communication. No carrier is permitted to undertake the construction or extension of lines, or acquire or operate any line or engage in transmission over such lines, without a certificate of public convenience and necessity. There are exemptions for local or intrastate lines and for those acquired in mergers and consolidations. This is an active field of regulation—during fiscal 1963, for example, the FCC authorized 331 applications for telephone cable, wire, and carrier construction, costing over $241 million. Technologlical developments in this regulated industry have been rapid, with expansion of microwave and coaxial cable transmission and experiments with such advanced communcations devices as masers being carried on constantly. Despite the complexities of this field, however, it does not appear that the communications industries have been hampered in their growth or delayed in their technological development by the FCC's exercise of certificate jurisdiction.

Would certification unduly delay extra-high-voltage construction? The most serious criticism of S. 2140, in my judgment, is the charge that it might create long delay in the construction of valuable extra-high-voltage projects, and consequently hinder the rapid spread of new technological benefits. If I believed this would be the result of extra-high-voltage certificate legislation, I would find it difficult to support the principles of S. 2140. I am convinced, however, that certificate legislation, properly administered, will not work substantial delays. Instead it may well accelerate the completion of extra-high-voltage projects.

I note at the outset that the consultative extra-high-voltage bill, S. 2139, provides for a fairly substantial amount of delay in its 2-year suspension provision. Leaving this aside, however, I believe that in the long run the exercise of compulsory powers from the first stages of Commission proceedings may save rather than waste time. Consider the case of a large extra-high-voltage project which is so designed as to exclude a number of small systems which might reasonably have been included. Under S. 2139, the Commission would make every effort to persuade the proponent of such a line to include them; and its efforts in this direction might well occupy the entire 2 years allowed. If at the end of that time the line were built as designed, the small systems would probably still wish to obtain the benefits of interconnection. If they could do so elsewhere, they might—with the result that a further series of projects would come before the Commission for consideration. On the other hand, these systems might choose to present their case under section 202(b) of the Federal Power Act which gives the Commission the authority to direct interconnections. After proceedings under this provision had been completed, the result would be more or less what the Commission could have accomplished in a single proceeding under S. 2140—with the added disadvantage that the small systems would be latecomers into an interconnection not designed to accommodate them, and that the costs of establishing connection would very probably be greater that if the entire complex of issues had been before the Commission when the new project first appeared on its docket.

The certification statute would expedite rather than delay extra-high-voltage projects if administered to permit maximum consideration of divergent views in the early stages of a proposal, before it is normally disclosed in present practice. I would expect under S. 2140 that in every major case of a kind liable to give rise to controversy, the Commission would not wait until a fully-shaped project was presented to it in the formal application. We should expect to establish a preliminary procedure, conducted as informally as possible, to assure that all interested parties learned of a proposal at the earliest possible time. Useful procedures are suggested by the experience under part I of the Federal Power Act. We have recently promulgated a regulation requiring would-be hydroelectric licensees to consult State and Federal fish and wildlife conservation agencies before they file their formal applications and to reflect in an exhibit to their application a conservation plan worked out as a result of such consultation. Somewhat similar procedures would probably prove fruitful in the extra-high-voltage certification field. Thus the reliability studies should be examined by our staff before the application is formally filed so as to permit time to require additional studies, if necessary, before plans are finally presented. Similarly, regular procedures should be established for informal consultations among all utility systems in the relevant planning area before the applicant or applicants formally present their proposal.

As I am sure you can appreciate, Madam Chairman, putting together one of these major transmission lines, is very time consuming and complicated under any circumstances. Yet the leadtime required to produce a large generating unit either nuclear or stream or hydro, does take into account some basic decisions, even before the generating facility is constructed. So we are talking about a process that, without regard to this legislation, is time consuming to begin with and the point that the statement undertakes to emphasize is that there are many reasons to believe that the time need not be extended and in fact, from many points of view, might well be reduced.

Today under the arrangement that the Commission has with the industry advisory committees, and again "industry" encompasses all elements of it, both nationally and regionally, there are opportunities for the people who make decisions affecting particular utilities, to get together and talk. They have been extremely candid about what they are contemplating in the months and years ahead. Thus, to some extent, this voluntary consultative approach that S. 2139 would formalize already takes place in an informal fashion. We think that it is useful and helpful and would want to encourage and promote it in every way. But it still does not get to the point that the majority of the Commission believes is important and that is that the Commission having undertaken review, should issue the certificate and have the final say.

By providing a series of well-understood informal processes backed by the potential for formal hearings if necessary certificate regulation would facilitate the orderly resolution of many issues which, under the present division of responsibility, may be left hanging until the last minute. By granting a Federal power of eminent domain to successful applicants, the legislation would remove the necessity of securing the support of each intervening holder of a State certificate and permit the formulation of interstate transmission plans to proceed

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on the most rational economic and technical basis. By removing the artificial restraints of our present system of haphazard controls, the certificate bill would tend to speed up the process of extra-high-voltage construction.

In order to minimize the danger of delay, we favor inclusion in S. 2140 of the specific authority to employ the informal procedures contemplated by S. 2139 whenever it is possible thereby to expedite a decision one way or the other. To this end, we suggest that the paragraph of S. 2140 commencing at page 2, line 25, be amended to read:

"In all other cases the Commission shall expeditiously decide the application in accordance with the standards and procedures of subsection (e) of this section, after notice, and after engaging in such conference, hearing, or argument procedures, if any, as the Commission determines are necessary to resolve disputed issues of fact, law, and policy."

No formula of words, of course, can eliminate the possibility of delays. But given a will to shape efficient procedures backed by a clear legislative history that the Congress intends an efficient certificate procedure to prevail the danger of delay in contested chases can be overcome.

Should esthetics be spelled out as a consideration? As I have indicated, the Commission believes that considerations of land use and scenic beauty make up part of the complex of the public interest and are properly a consideration under the general standards proposed in all three bills. We would favor explicit language to that effect, however, and also propose that S. 2140 be amended to recognize the great weight that should be given to local opinion in the matter of esthetics to the extent that this may be accomplished without impairing the interstate interest in the transmission of electric energy in commerce. These objectives could be achieved by inserting the following paragraph between lines 11 and 12 on page 3 of S. 2140:

"In determining the public convenience and necessity, the Commission shall give due regard to the public interest in the use of the land and scenic resources of the area. The Commission is instructed to provide by regulation for the submission of views and reports by interested local, State, and regional bodies with appropriate responsibilities for the land use and scenic resources of the area; the Commission shall give great weight to the views of such local, State, and regional bodies in determining the primarily local aspects of land use and scenic issues."

Under the terms of the foregoing statutory language the Commission could expect to develop regulations designed to encourage comment by one or more responsible agencies in each case and to permit the treatment of a written report as evidence in the proceeding much as we now treat reports by Federal and State agencies in hydroelectric license cases under part I of the Power Act and the Fish and Wildlife Coordination Act. On the other hand, the Commission would still be in a position to resolve disputes among two or more agencies in one or more States (such as differences of opinion between the public utilities commission and the zoning board) and to reconcile local land use interests with the interstate interest that commerce in electric energy proceed efficiently and at a cost which is reasonably apportioned among all interested parties.

Should the law require a "common carrier" wheeling condition? S. 1472 provides, as one of the conditions upon which all certificates would be granted, that excess capacity of the certificated line to be made available to others on a "common carrier" basis. The Commission believes that this is not the best way of insuring that the benefits of new extra-high-voltage construction are equitably distributed. Under S. 2140, the Commission could insert in a certificate conditions specifically tailored to the needs of the case and a wheeling condition would very likely be appropriate in some cases. The Commission has imposed wheeling conditions before, under part I of the Federal Power Act, and its actions have been upheld by the courts. But this type of condition is not appropriate in every case. There is no doubt in my mind that the Commission could act more efficiently to protect the public interest if it were free to choose among methods of guaranteeing participation in the projects it would certificate to all whose participation would be in the public interest. In some cases, for example, joint construction and ownership of a line might be a better solution than "common carrier" status imposed by statute. In others, there may be no other person who can profitably use the line's extra capacity. Under such circumstances, it seems wiser to allow the type and degree of participation by outside parties to be determined as to the facts of the case dictate.

Should the law apply to all extra-high-voltage transmission lines? One of the most advantageous features of S. 2140 (which it shares with S. 2139) is that it applies to every line meeting the jurisdictional tests, rather than excluding those built by governmental bodies. As I have already stated, one of the primary benefits of these legislative proposals is that they provide a forum for the resolution of conflicting interests in and demands for the use of land. Whether the interest to be served by holding a hearing on such issues and attempting to hammer out a satisfactory solution is the interest of conservationists in maintaining natural outdoor beauty or wildlife habitats, of homeowners in preserving a residential neighborhood, or of sportsmen in protecting a recreationally valuable area, there is no reason why a Federal or State agency, municipality or REA-financed cooperative, should be any less bound to respect it than an investor-owned corporation. Nor does it make sense, in my judgment, to rely exclusively on the congressional appropriations process to provide such regulation of federally financed agencies. In addition, as the process of interconnection and coordination of our bulk power supply facilities goes forward, there will be an increasing number of interconnections between public and private systems. As the Northeast blackout of November 9, 1965, proved, a power network like a chain, is no stronger than its weakest link. It seems essential, therefore, to extend the stimulus to enhanced reliability which the certification program can achieve to all the lines that will contribute to the interconnected network—not just to those that happen to be owned by a private corporation.

It might be argued that Congress, in its exercise of the appropriation power, can insure that federally owned transmission lines will be safe, reliable, economical, and only minimally detrimental to the landscape; and that extra-high-voltage legislation is needed for non-Federal lines because, so it is argued, no agency performs similar

functions with respect to non-Federal lines. It seems to me that this argument misconceives the kinds of regulation to which privately owned utilities are subject and the nature of the appropriation process. While Congress, of course, can consider a wide range of issues in dealing with appropriation matters, the regulatory function of the appropriations process is better analogized to the action of a utility commission in passing upon an application for authority to issue securities to raise capital—where the primary issue is whether the benefits expected justify the expenditure proposed—than to the certification of projects. This "benefits versus costs" analysis, as part of the regulation of utility security issuances, is performed by the Federal Power Commission for those jurisdictional public utilities not exempted by section 204(f) of the Federal Power Act; and these last, as well as many of those not exempted, are regulated in the same fashion by State commissions. Those utilities that are members of holding company systems are also regulated by the Securities and Exchange Commission under the Public Utility Holding Company Act.

Thus, non-Federal projects are already subject to a type of regulation analogous to that provided by the appropriation mechanism, and would continue to be subject to such regulation. Similarly, Federal projects would, of course, continue to be subject to congressional and Presidential sanctioning through the budget and appropriations process. But neither this process nor State and Federal securities regulation of private utilities (nor the REA loan procedures for cooperatives) can fully substitute for a comprehensive certificate statute which makes one agency responsible for a thorough review of all plans for facilities to be operated as parts of the interstate network. Thus, the fact that Congress also passes upon the federally owned lines alone does not support a distinction between Federal and non-Federal projects so far as certification is concerned.

Should EHV transmission lines crossing Federal lands also be subject to regulation by the land management agencies? At present, the departments responsible for the management of Federal lands and reservations administer a set of rules for the granting of rights-of-way over these areas. These rules, which go beyond the protection of Government land and affect the actual conduct of utility business, were formulated to provide some degree of regulation in the absence of clear congressional action to formulate national electric transmission policy. If the Federal Power Commission is given primary responsibility for that transmission policy, it is logical and necessary that the land-management agencies devote their attention to protection of these properties, and that unecessary dual regulation not be continued. Consequently, we urge that S. 2140 be modified so as to state that transmission line certificates shall contain such reasonable conditions relating to land use as the department or agency managing the lands over which the line would pass may develop. This could be achieved by inserting the following sentence at the end of subsection (e), page 4, line 11: "A certificate authorizing the construction and operation of extra-high-voltage facilities located partly or wholly within the lands or reservations of the Untied States shall contain such reasonable terms and conditions relating to land use as may be developed by the department or agency managing those lands or reservations."

Under such a provision, the Congress would consolidate the economic and engineering regulation function in the Federal Power Commission. The Departments of Agriculture and the Interior would, of course, be permitted to appear as intervenors in the certificate proceedings to protect their interest in the generation, transmission, and distribution of energy.

Abandonment regulation: One additional feature of S. 2140 deserves mention. There is a subsection requiring that no public utility abandon or curtail any service without obtaining the approval of the Commission, which would be granted if a hearing established that abandonment or curtailment was consistent with the public interest. The Commission has recommended this legislation separately, as an amendment to section 202 of the Federal Power Act. As interconnection expands across State lines, it becomes increasingly important that distributors and other customers receiving power over these large lines be assured that continuity of service—beyond the terms of the existing contract—will be available on fair and reasonable terms. Otherwise, they will be understandably reluctant to enter into wholesale power arrangements with the large systems, despite the many advantages that such arrangements offer. Section 205 of the Federal Power Act offers some protection to the small system, since it has been held that an abandonment constitutes a change in rate schedule under that section. *Pennsylvania Water & Power Co.* v. *Federal Power Commission*, 343 U.S. 414 (1952). But such a change can, under section 205, be suspended by the Commission for only 5 months; if at the end of that time the Commission has not acted, the change may be made effective. The impact of such a situation on the small system dependent for its power supply on a larger neighbor would, of course, be very serious. The Commission, therefore, should have authority directly to pass upon such proposed abandonments in order to preserve the ability of such systems to maintain service.

Grant of eminent domain power: Another useful feature of S. 2140 (and S. 2139) is the grant of eminent domain powers exercisable in the district courts to utilities whose projects have been certificated. As I have explained, many States do give adequate condemnation powers to public utilities; but a few give none at all and a large number restrict these powers in such a way as to hamper EHV construction. In some States, for example, there are limitations on the width of right-of-way that can be taken—limits which are not adequate for safe operation at very high voltages. In other States, foreign corporations are not permitted to use the eminent domain procedure, and must strike the best bargains they can with property owners along the route of the proposed line. In view of the increasing resistance to construction of overhead lines in many areas, it will be helpful indeed if the utility—once its project has passed the tests of public convenience and necessity and has been certificated—can be sure of obtaining an economical and direct right-of-way.

At this point I might note that the Legal Advisory Committee appointed by the Federal Power Commission to assist in the National Power Survey addressed themselves to this very point. On page 25 of this statement, which we did abridge, there is a quotation from that legal group's report, which makes clear their own feeling that this right to have eminent domain, not fragmented by the law of each State,

but consistent with the interstate character of the line, is most important.

Proposed effective date: We believe that when Congress enacts EHV legislation it will be well advised to provide some reasonable period of months before the legislation becomes effective to permit an efficient transition to certificate regulation. During this period the Commission would develop regulations, organize an appropriate staff organization, and employee consultative techniques to familiarize itself with the immediate developments in EHV planning and design for the future. We recommend that the certificate provisions not apply to lines already under construction at the effective date of the statute but not yet energized. We think this change would also make for a smoother administrative transition to regulation than the present provision of S. 2140.

Conclusion: The electric utility industry doubles its capacity every 10 years, and if the predictions for the future are accurate, by the year 2000, we will need to have created six times the facilities which we possess today. The electric utility industry is the leading industry in this country in terms of dollar investment. Well over $80 billion are represented in today's plants and facilities. We will need six times as much by the year 2000.

This dynamic growth and our capacity to meet it rests upon accelerated technological progress which, in turn, may impinge upon established social and economic values and holds the key to great opportunities for use or misuse. By studying the implications of the new extra-high-voltage transmission technology the Senate Commerce Committee undertakes a signal public service for America: to fashion national power policies adequate to the challenges of rapidly increasing demands for electrical energy, vastly advanced power technology and an awakened public consciousness of these facilities' appearance. Thank you.

This ends our formal statement, Madam Chairman. There may be other members of the Commission who would like to comment. If there is no objection, we might ask them.

Senator NEUBERGER. Commissioner Bagge.

Mr. BAGGE. Madam Chairman, I would like to say that I support what the chairman has said in his statement.

I would like to highlight for the record, however, only those areas in which I have some differences of opinion. In the first place, I affirmatively oppose S. 1472 for the reasons set out in my letter to Chairman Magnuson dated July 26. This is based primarily upon the fact that it does not extend to all of the segments of the electric power industry but is applicable only to the investor-owned segment.

I would like to indicate too that I have changed my position from support of S. 2139 to support of S. 2140 for the reasons also set out in my letter to Chairman Magnuson. My support of S. 2140 is predicated upon three conditions. The first condition being that the bill be enacted in its present form, in that it would apply to all segments of the electric power industry, whether investor owned, cooperatively owned, or publicly or federally owned.

It is also conditioned upon the enactment, in substantially the same form, of the language referred to by Chairman White, relating to giving recognition to the fact that land use issues, esthetic issues are

matters primarily of local concern and that the Commission would act independently in the resolution of those issues only when those determinations created a burden on interstate commerce or effectively precluded the construction of the extra-high-voltage line.

The third condition being that the bill should also be amended to expressly provide for the utilization of consultative techniques where they are feasible and thus retaining many of the values which were sought to be achieved by S. 2139.

Senator NEUBERGER. What do you do when there is a request for certification of a high voltage line which approaches a city or a large populated area?

Mr. WHITE. Under our existing statute, we really are powerless to do anything except to consult. I am not familiar with any specific instances in which that has arisen. I would assume, for example, that if tomorrow, we had a complaint by somebody, the best thing we could do is to urge them to get in touch with the particular utility involved in the construction and see what they could do with it. Where it involves a licensed project under the Federal Power Act, that is, a hydroelectric plant on a river or stream over which we have jurisdiction, then the primary lines themselves, those that emanate from the project, we do control. But normally, those are somewhat far removed from urban areas and we are not very likely to find ourselves faced with that particular problem. It did arise in the *Storm King* case on the Hudson River, and as you may know, that one is before the Commission on remand. I think it is one we can't really discuss in any detail.

In general, I think the answer to your question is that we have simply not had any extensive experience and we have very little authority.

Senator NEUBERGER. But, as the high voltage transmission line approaches a populated area, then is their distribution point where it goes into lower voltage outside of say, St. Louis or Nashville or somewhere?

Mr. WHITE. It depends. In the city of New York, for example, because of the peculiar topographical arrangement, and heavy congestion, some of that very high voltage line will go right into the city proper, underground through deep tunnels. But generally, the effort is made to take extra high voltage to areas outside of the city limits and outside of the most congested areas and then reduce the voltage before sending the energy throughout the distribution system of the company.

Senator NEUBERGER. Do some other members of the Commission have a comment? Mr. O'Connor?

Mr. O'CONNOR. I would like to add to my prepared remarks an illustration which may not be in exact parellel, but which I think is significant. Our national power survey, which is one of the real accomplishments of the Federal Power Commission, was developed under a policy of setting guidelines for the industry, rather than directions, I think that the cooperation between the various groups in the preparation of that report shows that consultative approaches can be very effective.

I think the provisions in the proposed legislation permitting a Federal Government grant of eminent domain to take rights-of-way will provide sufficient control to insure that extra-high-voltage lines will

be constructed in the public interest. I cite the Northwest-Southwest Intertie, where the great blocks of rights-of-way were dependent upon approval by either the Department of the Interior or the Department of Agriculture. There were many diverse interests involved in putting that project together. The project was worked out without the extreme amount of control proposed by S. 1472 and S. 2140 which I deem unnecessary.

However, if you had legislation like S. 2140 in effect, instead of being in construction today, I believe that construction on the Pacific Interties system would be 6 months to 18 months away, simply because of the right of the few interests who have not been fully satisfied to further litigate the Commission's findings.

I would also like to mention, two errors which I think have entered the record, although I may have misunderstood the statements. First, the investment tax credit as applied to electric utilities is 3 percent and not 7 percent.

Second, I don't think electric utility rates are generally going up. Profits may or may not be too high, but the rates themselves are not going up. One reason that present rates may not be excessive is the current reduction in the leverage or spread between the cost of borrowed money that utilities have to secure, and the normally greater return they are allowed on rate base. Profits can reverse dramatically under the type of money market conditions today; if you remain close to 6 percent for borrowed money, these excessive profit margins may vanish. I think many utility rates are not as low as they should be and some profits are too high, but I think the present cost of money is an important consideration in today's circumstances.

It seems to me the fatal weakness under S. 2140 or S. 1472 is that the Government has the final say; the Federal Government then becomes the guarantor of the reliability of service and the satisfaction of esthetics and other matters for all of these parties. I seriously doubt whether this is a proper function of the Federal Government under the circumstances.

Senator NEUBERGER. Any one else?

Mr. WHITE. Apparently not, Madam Chairman, but obviously, we are all prepared here to answer any questions that you may have.

Senator NEUBERGER. Your report is very complete. I appreciate the constructive suggestions for amendment and improvement. I do feel better equipped to carry to the rest of the committee some of the comments on the various bills.

Unfortunately, we had an early call into session today and it has taken some Senators away. I have just a few questions although I feel quite well informed on your various viewpoints on this problem.

Senator Metcalf, and you, and I think Commissioner Bagge have mentioned the blackout in November. Can you explain how any of these bills could prevent a reoccurrence of that?

Mr. WHITE. I will do my best, Madam Chairman. The central conclusion from the Federal Power Commission report undertaken immediately after the blackout and issued in December of last year, was that the interconnection was simply inadequate for the situation that developed.

But it is equally clear that all responsible observers and participants in the industry do not believe this demonstrates that the interconnection itself is something bad that should be avoided.

What we really conclude is that interconnections must be strengthened. One of the central elements of an interconnected system that can withstand surges of power of the type that created the difficulty on November 9 will be a powerful extra-high voltage transmission network.

To the extent that any of these bills would promote and encourage the construction of transmission lines that will strengthen the interconnection and the opoprtunities for coordinating these diverse, separately owned systems, then we will be that much better equipped to withstand the type of situation that did occur. I don't think anyone can absolutely say that if any of these bills were enacted into law, that tomorrow the mere enactment of them would somehow or other strengthen the electrical system.

We do, however, believe that it could well promote the most effective, the most efficient type of transmission network and I think there is no doubt that an efficient, effective transmission network is an important element in securing system reliability. Reliability of system and network design is really the touchstone for the solution to what happened in November.

Senator NEUBERGER. This is where I question a voluntary plan. I don't know how you are going to bring this about unless you have some regulations. You can't depend on it to be voluntary. I say this because in this very room we held hearings about auto safety and the voluntary proposals made by the auto industry just didn't seem to bring about some of the safety requirements that experience has proved are needed. Unfortunately, there has to be some enforcement, some regulation, or it is human nature that some of these things don't take place.

How many electric systems are there in the Nation?

Mr. WHITE. If we count each municipally owned system as a separate system, we have thousands, on the order of 3,000 to 4,000. But in terms of principal utilities throughout the country, the major ones are in the order of 400 to 500.

Senator NEUBERGER. Would these bills have any tendency to reduce this number?

Mr. WHITE. No; in fact, a coordination arrangement of this type might well offer an additional or different way to reach the same end. This whole idea of reliability, this whole idea of getting the maximum use of the technological developments that have occurred, can be achieved in a number of ways.

One of the ways is merger and consolidation. And there are those who suggest that some time in the future, there will only be a dozen power companies in the country. There are those who feel the only way to do it is to have this Nation take it all over as is done in some other countries and have a centrally owned, Government-owned system. Obviously, this is not a satisfactory alternative.

Before this committee, just a month ago, we talked about the possibility of providing a way for the Federal Power Commission to grant immunity from antitrust regulations for those companies and organizations that want to get together. Again, this would provide a means of encouraging both the large and the small to combine their efforts, not under single management, but under a pooling arrangement whereby the small can benefit from the technology that they couldn't undertake on their own, because they are simply not large enough.

Senator NEUBERGER. I tremble to think what would have happened if we hadn't had the Federal Power Act. It has been necessary in the public interest and I think experience proves that there has been no domination of Government over private industry. Haven't we been able to work together pretty well in developing this?

Mr. WHITE. It has been described as a pluralistic system. There is rivalry, competition, each wants to do better than the other. I think this is for the good of the general public.

In many areas of the country, the Northwest for example, they have worked together and cooperated completely, so that there is no feeling on this Commission that I have ever detected that this pluralistic system ought to be replaced by any other arrangement.

As to the Wheeler-Rayburn Act: if it hadn't been enacted in 1935, then a similar law would surely have been enacted shortly thereafter.

Senator NEUBERGER. There was a need and it is a sign of progress that we don't just consider it static and that we——

Mr. WHITE. We are grateful, really, for the opportunity to have public hearings on this EHV legislation and appreciate your interest in doing so, because we are living with a statute that was created in the 1930's, and unmistakably the changes in technology since that time have been radical.

Senator NEUBERGER. One of the fascinations of being a politician is to think back when people opposed legislation which becomes law. One of my real delights is reading some of the hearings at the time when the Bonneville Administration was set up and how Portland businessmen and utility companies objected to it. Those very utility companies have made a great deal of profit from distributing Bonneville power and I won't be so unkind as to remind them how they opposed it. This was true in TVA; it is true in any kind of progressive legislation, I think.

I am rereading some of the files in my office now, preparatory to putting them in archives. It is fascinating to read the material I received on medicare over the years. I wonder how those same people are going to feel about it 10 years from now. So I am delighted when we have a Power Commission that is moving with the times and looking ahead.

I have a great interest in the points you have made about the use of the land. In your prepared testimony you talk about the construction and certification of the overhead lines. Aren't you going to run into conflict with those who have already testified on other bills that scarring the earth with a new line is going to be detrimental to the national interest? What are you going to do?

Mr. WHITE. I think it is apparent, Madam Chairman, that should this legislation be enacted, the Commission will quite likely find itself with some very sticky problems. Yet all five of us have voluntarily undertaken to define the public interest as best we can, and where there have to be adjustments, adaptations, compromises, or some other accommodation of conflicting goals and objectives, then we hope and believe that we are as good a body as the next to do it.

Obviously we hope that the problems will be minimal and yet I feel that there are strong indications and evidence that this Commission is very much concerned about the environment in which we live—the

air, the water, the scenery, the esthetics. We are enthusiastic about your proposal on undergrounding and research into that field and continue to feel strongly that way.

Senator NEUBERGER. I know it involves weighing, I suppose, the greatest number. Isn't this part of the conflict on the Hudson, bringing power into New York City?

Mr. WHITE. It is, although if I may, I would rather not discuss that particular case since it is pending before us.

Senator NEUBERGER. I was talking about looking backward. I have a feeling that 15 years from now, we will look back and say it was the greatest good to the greatest number that the powerline go plunging through a certain area.

I have seen this happen with highways. We figure we are accommodating people, and they make use of it. It is like tearing down the Met, or tearing down buildings or this sort of thing. It always ends up that the industry rather than the public seems to get it.

Mr. WHITE. In the prepared statement, I am delighted to say we have pointed out one instance where the Commission refused to license a project solely on esthetic considerations.

Commissioner Ross, I am sure, has something to say on this subject. He is one of our leaders in sensitivity to environmental and esthetic issues.

Mr. Ross. Madam Chairman, I am in the process of trying to draft a response to the so-called Ottinger bill concerning the Hudson River. I only had it half done as of last night and I hope to have it completed this afternoon. I haven't yet shown it to my fellow Commissioners. I don't know what their positions might be.

However, I think this statement would be applicable to the question you raised and if I could have your permission, I would like to include that statement in the record, so far as it may apply to this particular bill, as a further response to your question.

Senator NEUBERGER. Yes, that will be very good. Thank you.

I think I have kept you all long enough and commend you on the very good explanation of all three of these bills.

(Material submitted by Commissioner Ross follows:)

SEPARATE COMMENTS OF COMMISSIONER ROSS

(H.R. 13508, 89th Congress, a bill to direct the Secretary of Interior to cooperate with the States of New York and New Jersey on a program to develop, preserve, and restore the resources of the Hudson River and its shores and to authorize certain necessary steps to be taken to protect those resources from adverse Federal actions until the States and Congress shall have had an opportunity to act on that program)

On March 9, 1965, the Federal Power Commission handed down a decision in the now famous *Storm King* case, by which it granted a license to Consolidated Edison to develop a pumped storage project at Cornwall, on the Hudson River. Obviously, the legislation before us would never have come to light had it not been for this occasion. Torn, as one naturally would be, between the competing claims of the utility company and of those interested in preserving the Hudson Highlands, I urged that "the Commission withhold a decision until the first of March, 1966." I added, however, "Postponements such as I suggest here cannot always be the order of the day. However, they are necessary, I believe, in the Commission's early groping to find standards by which it can equitably balance the traditional economic advantages of a proposed power project with the intangible values, such as aesthetics, fish and wildlife and recreation."

Here we are now, well over a year later and not surprisingly, no legislation has been enacted and the legislation proposed, worthy as it is, is to postpone for

an additional three years any development on the River. Surely this legislation fundamentally should concern itself with means of resolving the conflicting demands upon many of our river basins and other sites with historic or scenic value.

For this reason, the delay in the enactment of a bill is not necessarily to the public's detriment. Coincidentally with controversy over the development of Storm King, with which the Federal Power Commission is intimately involved, a comparable controversy has arisen over the necessity to develop the Colorado River above and below Grand Canyon. In the latter case, the Secretary of Interior is faced, as we were in the *Storm King* case, with conflicting interests. It is one thing for this Commission or the Secretary to assure the Nation that a power development will be compatible with other uses; it is entirely a different thing to determine without bias whether a power development should be constructed at all. In the latter case, too frequently, both ourselves and the Secretary may well be influenced by our natural inclination to believe we can have our cake and eat it as well. The Commission's right to condition licenses and the Department's expertise in the multiple areas of wildlife and recreation, valuable as they are, oftentimes obscure the fundamental issue whether our national heritage of historic sites and natural beauty requires any development at all. There are certain intangible aspects of living which cannot be adequately measured. It is those intangible features that provide the quality of life which in turn maintain the moral, spiritual and philosophic vitality of a nation. Economic vitality, on the other hand, and the affluence that goes with it merely reflect the inherent stability of society resulting from the endeavors of those who have enjoyed the quality of life sought since the beginning of time by every generation. I am reminded of the remarks of Sir Kenneth Clark which the National Trust in its annual report of 1964–65 suggested should be brought to the notice of the Members' friends:

"A responsiveness to natural beauty was one of the two great conquests of the human spirit during the nineteenth century; the fact that it has passed from a few poets, painters and men of letters to a mass of city-bound, work-oppressed humanity must ultimately be a gain to civilization. And if the thousands who visit National Trust properties would all become members, then it would be possible for the Trust to deal more firmly and comprehensively with the social and economic revolution which is threatening our landscape. The pleasures of England were the gradual creation of a rural landscape. They were saved from our first revolution, the industrial revolution because they were private property. They were the pleasures of the few. Now they must be saved from the social revolution and become the pleasures of the many; and this is being done by the one of those institutions which during the last seventy years have been a fortunate creation of the English genius, institutions which are both public and private, national and independent. If we pass through the next fifty years without too disastrous a loss of our natural and architectural beauties, if we manage to preserve those aspects of England for which people visit this country, it will be because we have given full support to the National Trust."

Rather than leaving the assessment of these intangible aspects which are embodied in sites of national interest to federal agencies like the Federal Power Commission or the Department of Interior, I would prefer to see them evaluated by individuals and organizations whose experience has given them a keener appreciation and broader perspective of those things to be preserved in order that all Americans might enjoy a finer quality of life.

Since we actually should be concerned with a policy for the Nation rather than special area legislation, I would suggest that the bill be amended to provide generally that no power development, or certification of EHV lines under the proposed S. 2140, whether by the Federal Government or by others be permitted until such development has been submitted for advice and comment to a suitable body of persons, modeled on the "National Trust for places of Historic Interest or Natural Beauty" in England. Wouldn't it be better if organizations like the Sierra Club could devote their energies to participation in such a body rather than fighting the Internal Revenue Service?

The National Trust, according to National Trust Act of 1907, is administered by a council consisting of a president and fifty members of whom (1)

25 shall be selected annually from among the members and (2) the remainder named as follows:

Any of the bodies or persons hereinafter named may appoint a member or members to the council of the National Trust as follows (that is to say):

Two members may be appointed by each of the following bodies or persons:

The Trustees of the National Gallery;

The President of the Royal Academy of Arts; and

The Trustees of the British Museum;

And one member may be appointed by each of the following bodies or persons:

The Youth Hostels Associations (in place of The President of the Royal Society of Painters in Water Colours);

The President of the Society of Antiquaries of London;

The President of the Royal Institute of British Architects;

The President of the Linnean Society;

The President of the Entomological Society;

The Royal Horticultural Society (in place of The President of the Royal Botanic Society);

The Vice-Chancellor of the University of Oxford;

The Vice-Chancellor of the University of Cambridge;

The Vice-Chancellor of the University of London;

The National Trust for Scotland for Places of Historic Interest or Natural Beauty (in place of The senate of the University of Edinburgh);

The National Museum of Wales (in place of The senate of the University of Glasgow);

The Ramblers Association (in place of The senate of the University of Saint Andrew's);

The Governor of Northern Ireland (in place of The senate of the University of Dublin);

The chairman of the Commons Preservation Society;

The Society for the Promotion of Nature Reserves (in place of the chairman of the Hyrle Society);

The Selborne Society;

The County Councils Association;

The Society for the Protection of Ancient Buildings; and

The Trustees of Public Reservations Massachusetts, United States of of America.

With the wealth of organizations in addition to the Sierra Club, such as the National Geographic Society, the Conservation Foundation and the Wildlife Federation, this Nation could easily establish such an illustrious and influential body whose opinion would normally carry the day. At the very least, the advantages of any development would have to be clearly in the Nation's interest before this Commission or the Secretary would overrule the objections of such a body.

Fortunately for the Nation, in one respect, the public's attention has also been drawn to similar situations in other parts of the nation, notably the attempt to preserve the Redwood trees in California; the possible daming of part of the Grand Canyon, and restoration plans for the West Front of the Capitol. Public interest in these scattered events has become a matter of national interest. Across the land, there is an increasing amount of concern in preserving sites that may not be so vast as the Grand Canyon or as historically significant as the Capitol—but nevertheless are matters of not only intense local pride but ofttimes worthy of retaining for the nation as a whole. To date, survival of these sites and their restoration have often depended on sporadic local efforts by a few people with sufficient finances and energy to wage a successful effort against competing interests.

The people of this nation are more than receptive to the amenities that enhance the quality of life, as may be seen in the enthusiastic response to the Administration's efforts in this area, and the personal efforts of Mrs. Johnson. What is now needed is an imaginative effort to communicate this enthusiasm into constructive law. By establishing a National Trust available for consultation and entrusted with the preservation and restoration of sites of national merit, this nation's heritage can be given an orderly and long-overdue consideration by an eminently qualified group. Agencies like the Federal Power Commission will be greatly assisted in their duties by the Trust's advice and ultimately, the nation as a whole will benefit from the far-sighted legislation which this Congress has the opportunity to enact.

Senator NEUBERGER. The next witness is the Assistant Secretary for Water and Power for the Department of Interior and he will be accompanied by Mr. Toman, Assistant Administrator, Washington, D.C., Office, Bonneville Power Administrator, Department of the Interior.

STATEMENT OF HON. KENNETH HOLUM, ASSISTANT SECRETARY FOR WATER AND POWER; ACCOMPANIED BY GEORGE W. TOMAN, ASSISTANT ADMINISTRATOR, WASHINGTON, D.C., OFFICE, BONNEVILLE POWER ADMINISTRATOR, DEPARTMENT OF THE INTERIOR

Mr. HOLUM. Thank you, Madam Chairman. As you noted, I'm accompanied by George Toman, Assistant Administrator of Bonneville. Mr. Luce, the Administrator, was not able to be here because of a transportation problem.

This is the third time I have appeared before this committee this summer. It has been a unique and valuable experience for the Department of Interior to appear before the Senate Commerce Committee. I want to compliment you, Madam Chairman, the members of the committee and chairman of the full committee, because on every occasion, we have considered matters of tremendous importance, we believe, to the electric industry and general welfare of the country.

I want to note before I get into my prepared statement that we in the Department of Interior feel that the members of this committee, and Senator Metcalf and Congressman Moss, have rendered valuable service in bringing these problems to the attention of the country. We are certain that their discussion is of great importance to all electric utilities and to all consumers of electric power in this country, as well as their general welfare.

Chairman White has rendered an excellent and detailed statement. He has emphasized and the Department of Interior certainly agrees, that it is essential to maintain the pluralistic electric system that we have here in this country. The pluralistic system that we have maintained in the United States has enabled this country to build the finest electric system that exists any place in the world.

The challenge now before us is a challenge of finding appropriate mechanisms for using rapidly developing technology both with respect to large generating plants and high-voltage transmission lines to further the best interests of all segments of the utility industry and in that way to serve the general public welfare. And in that context, we think that these hearings that are being conducted today and have been conducted on previous occasions by the Senate Commerce Committee are very much in the public interest and we hope and we are confident as a result of these hearings, there will emerge legislation and the necessary action to achieve these highly desirable goals and the Department of Interior subscribes to them enthusiastically.

In my testimony before the Senate Commerce Committee on July 12, 1966, in support of the objectives of S. 3136, I quoted a statement made by Secretary Udall on February 14, 1961. The statement, I believe, bears repeating at this hearing because it sums up an important aspect

of departmental policy for our power-marketing agencies. It is as follows:

> The furnishing of an adequate supply of low-cost power for the homes, farms, and industry sufficient to service a dynamic economy is a matter of basic importance to the economic growth of the Nation and is, therefore, a matter of governmental concern. Utility systems of all kinds—Federal, State, municipal, private, cooperative—must carry out their responsibilities to the public welfare.

He went on to say that these "fundamental principles form the foundation upon which we will build a sound power program for the future."

The three bills under consideration deal in difference ways with significant aspects of EHV transmission which, as a major new undertaking in the electric utility industry today, is, as you might expect, fraught with problems of both a technical and operational nature. The problems associated with the inevitable advent of EHV transmission have been carefully considered by the Department and the Secretary and certain conclusions have been reached. Over 3 years ago Secretary Udall stated in a speech on power policy:

> The Department of the Interior favors legislation, now before Congress, which would strengthen the position of the Federal Power Commission over certain high-voltage transmission lines to assure their maximum use in carrying electricity.

While each of these bills is different and varies from legislation proposed in past years, we agree that they seek to accomplish highly desirable objectives. Rapidly advancing technology in EHV transmission not only makes it possible but economically desirable to interconnect power systems over large areas. Doing so enhances the dependability of all electric systems and achieves substantial economies as well. For example, we estimate the $700 million Pacific Northwest-Pacific Southwest Intertie project will produce $2.6 billion in benefits over a 50-year period. Moreover, the Federal Power Commission's national power survey predicts that interconnection and coordination of separate systems will continue to increase on a broad scale, simply because the arrangements will produce substantial benefits to participating members.

Just 2 weeks ago, as a result of the unusually warm weather in the Middle West and across the country, major power disturbances occurred in the State of Nebraska. Two weeks later I think all utilities under a wide variety of ownerships in Nebraska and the neighboring States agree that the major need in order to prevent a recurrence of the blackout that occurred in Nebraska 2 weeks ago is more transmission lines of higher voltage feeding into the State.

It is important that these lines be constructed in a manner that permits the greatest use by the largest number of power producers and consumers. Since these EHV lines will extend thousands of miles and occupy hundreds of thousands of acres of land, their utilization should be maximized in order to conserve valuable resources and fully serve the general welfare of the country. To be sure this is accomplished we are convinced that action should be taken to make certain that all utilities have an opportunity to participate.

The public interest requires that this country maintain the best and most efficient electric system possible. Power-marketing bureaus of the

Department of the Interior operate extensive power systems which are interconnected with the systems of others.

However, Interior's interest in EHV transmission goes beyond power-marketing responsibilities related to reliability, efficiency, and safety. We are equally concerned about minimizing the adverse effect of transmission lines on the beauty and importance of developing orderliness of the American landscape. We are eager to avoid duplicating transmission lines when one line of higher voltage can serve all uses.

It must be noted, however, that efficiencies of scale and interconnection pose possible disadvantages as well as advantages. Not all of the Nation's utilities can avail themselves of larger sized generating plants and extra-high-voltage transmission lines for a variety of reasons, including their inadequacy of size of utility, lack of capital and lack of pooling opportunities. If only a limited number of systems can take advantage of the new technology and interconnections, there is serious question that our pluralistic utility industry composed of many segments, small and large, private and public, can survive. It is, therefore, a proper Federal responsibility to provide protection, as well as guarantees that these benefits will be shared by all segments of the industry, and their customers. We favor such legislation. We believe that these hearings offer a timely opportunity to explore in depth the best method to achieve these objectives.

Of the three bills, we recommend S. 2140 be enacted if amended. If this is done further consideration of S. 1472 and S. 2139 is unnecessary.

S. 2140 gives to the Federal Power Commission final authority for the construction and operation of extra-high-voltage transmission lines. The bill requires that an application for a certificate of public convenience and necessity shall be filed with the Federal Power Commission for lines with voltages in excess of 200 kilovolts. The FPC would be empowered to review the extent to which such proposed facilities would be consistent "with a comprehensive plan for the use and development of the power resources of the area." Certificated applicants could be granted powers of condemnation by eminent domain proceedings. The bill prohibits abandonment or curtailment of certificated facilities without FPC approval.

The bill adds a new subsection to the Federal Power Act, extending the terms of section 202 of the act to include jurisdiction over departments, agencies, or instrumentalities of the United States. We urge that this subsection be deleted. We agree that interstate extra-high-voltage transmission facilities which are capable of becoming part of an interstate network should be subject to careful Federal supervision and regulation. We consider the FPC the appropriate agency to discharge this responsibility. But where the operating agency is an arm of the Federal Government, it need hardly be said that the public is already adequately protected from the dangers of unregulated construction by the fact that such Federal construction is subject to congressional review and approval. The authority provided by this bill would in effect subject congressional actions to FPC veto or amendment. It could preclude our recommending a transmission line to the Congress until it had been approved by FPC.

I want to add, Madam Chairman, we recognize nonetheless in the Department of the Interior, that coordination between our transmission

line programs and power planning in the Federal Power Commission is necessary and appropriate. We would expect in the Department to continue the fine relationship that exists at the present time, has existed traditionally between the Department and the Federal Power Commission. I'm sure that the objectives sought to be achieved by this particular section in the act can and will be achieved more informally.

It is clear that there must be some sure and orderly means of coordinating and controlling the proliferation of non-Federal extra-high-voltage transmission lines. Without this the American economy could be exposed to the possibility and perhaps probability of insufficient and badly planned utility systems. We can expect the best results only if a public agency has the opportunity to actively participate in the planning process and sufficient authority to make certain that sound results are accomplished. An agency for this purpose already exists—the Federal Power Commission.

We consider permissive type of regulation exemplified by S. 2139 as inadequate to meet the needs of the situation. The more forceful approach embodied by S. 2140 is more appropriate, and for that reason we endorse it. Before enactment, however, we strongly recomend that it be amended by striking from page 5, lines 16 and 17, "and any department, agency, or instrumentality of the United States".

With this amendment the Department of the Interior supports enactment of S. 2140.

S. 1472 is similar in scope and intent to S. 2140. However, S. 2140 describes in somewhat greater detail standards which must be applied by FPC in granting certificates, permits condemnation powers to be exercised by certificated applicants, and extends licensing powers of the Commission to cover lines constructed by the Federal Government and by municipalities. We agree that the grant of condemnation powers may be desirable. We have already described our reaction to the bill insofar as it affects Federal agencies.

S. 2139 seeks regulation by consent rather than by direction from a regulatory agency. It contemplates that utilities applying to construct extra-high-voltage facilities will file proposed plans and specifications with the FPC. FPC would then coordinate the application from the public interest point of view with other conflicting proposals. If the Commission should approve the plans, it would issue a certificate to that effect. Issuance of such a certificate would carry with it the right of condemnation by eminent domain procedures. If any lands to be crossed should be public lands of the United States, the applicant's right to use those lands would be subject to such reasonable terms and conditions as may be adopted by the Federal agency or agencies with jurisdiction over those lands, if approved by the Commission. If FPC approval were withheld, the applicant could nonetheless proceed with construction, without eminent domain powers, after a lapse of 2 years from the date of application.

It appears that under this bill Federal agencies would be required to file applications for certification in the same manner as public utilities.

We believe S. 2139 is inadequate to accomplish its desirable purposes. The history of the development of the electric power industry in this country does not encourage a realistic expectation that different

segments of the industry would be able to reconcile, by voluntary means, differences that inevitably must arise with regard to whom should build those lines and where they should be placed, and who should use them. A review of the long and tortuous history of the Northwest-California intertie, now under construction, strongly leads the Department of the Interior to this conclusion. It seems far more likely that an agency wishing to construct such lines will make substantive changes in its proposals in order to achieve FPC certification, only if such certification is essential to permit it to acquire or pass over critical lands.

In conclusion, we support S. 2140 with the proposed amendment because: (1) a legislative standard is added to assure that new lines will meet all power needs of an area, based upon a comprehensive plan; (2) filing requirements for a certificate are explicit; and (3) the power of eminent domain is made available to facilitate the construction of certified lines.

Senator NEUBERGER. Now you are very much in disagreement with at least some members of the Federal Power Commission about the jurisdiction over departments and agencies of the U.S. Government. Does that mean like the REA's and PUD's, and so on?

Mr. HOLUM. Madam Chairman, I'm speaking only for the Department of the Interior and while we agree that transmission lines that we plan must take into account the total national interest and plans of the Federal Power Commission, we cannot agree that it is wise or appropriate or necessary to put the transmission line programs of the United States, subject to the approval of the Congress, in the same category as the transmission lines of others.

We do expect if S. 2140 is enacted or similar legislation, we would expect and consider it our obligation to work closely with the Federal Power Commission, as we do now, to be sure what we do fits into their plans. But we cannot agree to go as far as saying that they should have the final authority over the lines that we propose or that have been approved by the Congress.

Senator NEUBERGER. Can you think of a situation where they would do something that would be contrary to good development, by your standards? I don't quite visualize such a situation because I know how the Department has cooperated in the West.

Mr. HOLUM. I think, Madam Chairman, that is why we feel the Congress can very safely delete this language from the bill. Looking back at the negotiations that we conducted over a long period of time on the West Coast Intertie, we did have to negotiate with all utilities. Two of our agencies were involved and innumerable utilities, both in the Northwest and South and Southwest and this was, as I have described it in my statement, a long and tortuous negotiation procedure. I'm sure that the Federal Power Commission approved of what we did and they would agree with us that the lines that are constructed are in the public interest, but we had plenty of negotiations to do and plenty of problems to solve without having simultaneously involved another Federal agency in the same process. I want to further say that I'm sure we would not have proceeded with our negotiations for

the West Coast Intertie without knowing that these fit into the broad, long range plans of the Federal Power Commission.

Senator NEUBERGER. When it comes to the power of eminent domain to facilitate the construction of certified lines, eminent domain means the right to take some rights-of-way and they might need to go over Federal lands. That is what happened in the intertie situation.

Mr. HOLUM. The question of use of Federal lands was involved. It is involved in most of the negotiations in one degree or another. On this question there is no disagreement between the Department and the Federal Power Commission. If S. 2140 is enacted, we would agree that the responsibility for our transmission line planning, per se, when it involves Federal lands, is the responsibility of the Federal Power Commission. We would reserve, and I think Chairman White's statement makes it very clear that they agree, that the land management agencies, Interior or Agriculture, would have the final say as to the placement of those lines and the effect on the national forests or the national parks or lands administered by our land management agencies. I'm certain there is no disagreement between us and the Federal Power Commission on this point.

Senator NEUBERGER. Thank you. Do you have anything to add, Mr. Toman?

Mr. TOMAN. No.

Senator NEUBERGER. Thank you very much for your testimony. I have no more questions.

Mr. HOLUM. Thank you.

Senator NEUBERGER. The next witness will be Mr. Norman M. Clapp, Administrator, REA, Department of Agriculture.

STATEMENT OF NORMAN M. CLAPP, ADMINISTRATOR, RURAL ELECTRIFICATION ADMINISTRATION, DEPARTMENT OF AGRICULTURE; ACCOMPANIED BY CHARLES U. SAMENOW, CONSULTANT, OFFICE OF THE ADMINISTRATOR, REA

Mr. CLAPP. Madam Chairman, my statement is quite brief, so I think I can finish it and allow the committee to get out of here in good season.

Senator NEUBERGER. Fine.

Mr. CLAPP. For the record, I might identify Mr. Samenow, seated at my left, who is legislative consultant for the Administrator of Rural Electrification.

I'm here at thet committee's invitation to present the views of the Department of Agriculture on three bills dealing with Federal Power Commission jurisdiction over extra-high-voltage—EHV—transmission facilities.

EHV transmission is the technological partner to large-scale generation. Together, these quite recent developments promise substantial economies in the production and delivery of bulk power.

The thousand rural electric systems which came into being as a result of the enactment of the Rural Electrification Act of 1936, and are REA borrowers, depend upon outside sources for more than

four-fifths of their power supply. They generate less than one-fifth of the power they distribute to their rural consumers. Approximately half of the power they purchase is supplied by investor-owned power companies. The remainder is furnished from public sources, primarily Federal, as to which the rural systems have preference rights under a long series of congressional enactments.

These systems, for the most part, due to their size and comparative isolation from each other, do not have the same opportunities to utilize the technologies of large-scale generation and EHV transmission as do the larger investor-owned companies. But their participation in the benefits of these technologies is fundamental to their making available adequate power to their consumers at cost levels necessary to accomplish the purposes of the federally financed rural electrification program. This is recognized in chapter 16 of the Federal Power Commission's 1964 National Power Survey which discusses the problems of the smaller systems in the electric power industry.

A primary concern of these systems is the effective application of their established preference rights to power and energy developed at large-scale Federal multiple-purpose dams. This power and energy is capable of delivery over EHV transmission facilities for a thousand and more miles. Where a Federal power marketing agency builds and operates the EHV line, preference rights can normally be effectively exercised. But where the EHV line is owned and controlled by others, a real problem can arise unless the perference holder is placed in a position to make actual and effective use of the preference.

In those cases where rural systems can join together to plan and build a generating plant sized to reap the benefits of scale, they may and do encounter the problem of economical transmission over long distances to reach their load centers. Access to and use of the EHV facilities of others could in such cases be the only practicable method of benefiting from the economies of scale in generation.

The rural systems rarely have the bargaining muscle to assure their admission to participation in the regional and interregional power pools which are developing all over the Nation. Too often, they are being excluded, or if admitted, are given only token recognition.

Because of the interstate and regional character of most power pools, and the EHV transmission facilities which promise to become the basic building blocks of the industry nationwide, regulation by single State commissions cannot effectively promote and protect the public interest. Federal regulation is needed, and until it is supplied, the rural electric systems will have no effective forum in which to press their claims.

The three bills before the committee designate the Federal Power Commission as a forum with varying degrees of effectiveness. It is our view that S. 1472 and S. 2140, each with some modification, would supply the Commission with the authority needed to assure the widest measure of protection of the public interest in the optimum utilization of the EHV technology. In our opinion, S. 2139 is totally inadequate for this purpose. It does not supply regulation in a form which the circumstances call for if indeed it provides regulation at all. At most, it interposes a 2-year period of consultation with, and persuasion by, the Commission which hopefully will produce an EHV project serving the public interest.

Turning to the remaining bills, we recommend, in the public interest, that whichever be enacted, the certification procedure includes the following requirements:

First. That the EHV facility certificated be adequate to serve all present and reasonably foreseeable future needs of users and suppliers of electric energy within the area served thereby, with provision, if necessary, for financial participation in cost of capacity added to meet such needs;

Second. That the EHV facility be available for use by all suppliers and distributors of electric power in the affected areas on reasonable terms and conditions, for delivery of power, regardless of and without limitation upon source or destination of the power;

Third. That safeguards be provided against undue concentration of control over electric energy supply in the affected area; and

Fourth. That reliability of service from the proposed EHV facility be taken into consideration.

Further, we recommend (*a*) that the measure be restricted to public utilities as defined in section 201(e) of the Federal Power Act, and (*b*) that the certification procedure attach to transmission lines having nominal voltages exceeding 300,000 volts.

Recommendation (*a*) would exclude from the Commission's jurisdiction public bodies and cooperatives. As to this point, we shall not burden the committee further with the justification in view of its lengthy presentation in the hearings on S. 1459 which this committee favorably reported and which the Senate passed by a vote of 86 to 5 on August 26, 1965.

Recommendation (*b*) merely gives recognition to the generally accepted designation of 345 kilovolts as the initial voltage in EHV. Lowering the jurisdictional voltage to 200,000 would greatly increase the regulatory burden and occasion delay in the regulatory process. We recognize that this action may encourage certain utilities to plan transmission at voltages below 300,000 despite engineering and economic considerations which dictate higher voltages, as a means of escaping Commission regulation. The economic advantages, however, should be great enough to overcome this but if not, the Congress can at a later date reconsider this question.

It is our firm expectation and belief that the extension of Federal Power Commission jurisdiction to include the area recommended in this statement will make it possible to carry out the long-established congressional policy of extending the benefits of federally produced power as widely as possible; enhance opportunities for more effectively utilizing local resources such as hitherto unused low-cost fuel supplies, undeveloped pump storage sites, and existing thermal plants; broaden participation in the economies of large-scale generation and EHV transmission; and take an important step to the achievement of greater reliability of power supply.

Again, as always, it is a pleasure and a privileged to appear before this committee which has played such an important role in the enactment of effective and meaningful legislation for the proper development and management of our national resources. I thank you for the opportunity to present our views on this important and most timely proposal.

Senator NEUBERGER. I am thinking that S. 2139 is about to die of malnutrition. Somebody is going to have to come along and rescue it tomorrow or we will be forgetting it.

I think that probably we have had enough experience with all sorts of industries and utilities who volunteer to do something if we will just leave them alone, and then nothing ever happens.

I'm delighted to have your testimony, Mr. Clapp. It is valuable to hear from the REA's, as always.

The committee is adjourned until 10 tomorrow.

(Whereupon, at 12:10 p.m., the committee was adjourned to reconvene at 10 a.m., Thursday, July 28, 1966.)

EXTRA-HIGH-VOLTAGE ELECTRIC TRANSMISSION LINES

THURSDAY, JULY 28, 1966

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 10:05 a.m., in room 5110, New Senate Office Building, Hon. Maurine B. Neuberger presiding.

Senator NEUBERGER. The committee will come to order and continue hearings on Senate bills S. 1472, S. 2139, and S. 2140.

These are bills to amend section 202 of the Federal Power Act to give the Commission the responsibility for reviewing plans for the construction of extra-high-voltage transmission facilities.

Yesterday, the committee heard from Senator Metcalf, the members of the Federal Power Commission, the Department of the Interior, and the Department of Agriculture, all of whom testified favorably on the bills.

Senate bill S. 2139 received little support.

The need for this legislation arises from two sources: The first is the changing technology of the industry, and the second is the increasing recognition that there are other values than cheap electric power to be considered.

Today's witnesses will continue to elaborate on these changing attitudes.

STATEMENT OF WALTER BOARDMAN, WASHINGTON, D.C.

Mr. BOARDMAN. Mrs. Neuberger, I am Walter S. Boardman, formerly executive director of the Nature Conservancy and now serving as an independent consultant for several conservation organizations. My address is 2504 I Street NW., Washington, D.C.

My concern about legislation dealing with Federal authority over extra-high-voltage electric transmission lines comes from experiences connected with the proposed powerlines of the Consolidated Edison Co. in Westchester and Putnam Counties of New York. The frustration which the local residents felt over questions of where new and additional lines might be established underscored the need for public voice on decisions. At the same time, to place such authority with an agency other than the one approving the plant itself would simply add to the confusion.

Scenic and residential areas around our cities should not be left at the mercy of the power company whose basic interests are quite naturally in economy and convenience.

With the rapid increase in the number of transmission lines together with the complexity of public and private ownership of utilities placed upon the rapidly diminishing open spaces make it imperative that Federal review of all new plans be established. Either S. 2139 or S. 2140 would provide for the consideration of good land use as well as power company interests in future construction.

Thank you.

Senator NEUBERGER. You differ from the majority of the Federal Power Commission and other witnesses about your support of S. 2139. This has a voluntary provision. Do you think that the companies would voluntarily agree to consider beauty and scenic easements and that sort of thing?

Mr. BOARDMAN. I would fear that economy and other forces might prejudice their decisions.

Senator NEUBERGER. Would you say that again?

Mr. BOARDMAN. If private companies are left to make decisions considering beauty, I feel that their interest in economy might prejudice their feelings or their decision.

Senator NEUBERGER. Senate bill 2139 leaves voluntary accord for the power companies. There is nothing mandatory about some of these provisions, so do you really support Senate bill 2139.

Mr. BOARDMAN. I am sorry, I am afraid that I did not fully catch that point. I do favor the organized Federal control.

Senator NEUBERGER. You want a bill that will supervise condemnations through Federal power and who will take particular cognizance of the effect upon the topography of the land?

Mr. BOARDMAN. That is right.

Senator NEUBERGER. Do you believe the Federal Power Commission then should have the authority to grant rights-of-way across public lands rather than leaving it in the hands of Interior or Agriculture or does it make any difference to you?

Mr. BOARDMAN. It would seem to me to be an orderly way to connect with power problems and it seemed in my judgment we should consolidate the control in one authority over all electric matters.

Senator NEUBERGER. Thank you very much, Mr. Boardman. We are glad to have your testimony.

The next witness will be the Honorable Richard L. Ottinger, Representative from the State of New York, who is well known for his outstanding efforts in this field in the legislation we are considering.

Mr. Ottinger?

STATEMENT OF HON. RICHARD L. OTTINGER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. OTTINGER. Madam Chairman, I am delighted to be back before this distinguished committee and particularly to be before you, on a question concerning powerlines. We have a strong tie in the powerline field and I feel very much we are on the same frequency.

Just 3 months ago, your committee made a great contribution to the problems in powerline field in the hearings on bills introduced by yourself and spurred research and development in underground transmission technology.

Considering the frequency with which I speak on this subject, I think I really ought to point out that I am not an engineering expert in extra-high-voltage technology. I have only a layman's knowledge of the technical electrical power transmission problems. But I am something of an expert in the effect of these lines on communities, on people, and on economic, scenic, and other values. My concern, as you know, was greatly enhanced by the prospect of Consolidated Edison Co. stringing overhead powerlines through some of the most beautiful parks in Westchester County, an area that I represent.

I am also something of a lay expert on the tremendous difficulty that citizens and communities have in protecting themselves from the destruction that these lines can cause, and the brutal indifference of utilities and State regulatory agencies to the problem. On this basis, and this basis alone, I would urge you to report the strongest possible legislation to bring all the EHV lines under one single responsible authority.

Frankly, words of praise for the Federal Power Commission do not come easily to me or to any other citizen who has tried to represent his interest before that Federal body. I think that with few exceptions in the past, the Federal Power Commission has not demonstrated the concern it should with economic and esthetic values of communities through which powerlines pass. But the unfortunate fact remains that the Federal Power Commission is all we have. It is the only agency of the Federal Government with the expertise and the charter that would allow it to render the judgments that will be necessary to prevent real havoc as the network of EHV powerlines spreads across the Nation.

I also think there are now some hopeful signs within the FPC itself. After many years of claiming responsibility for esthetic and conservation problems, the FPC is now being made to show a concern with them. I would hope that the recent regulation requiring affirmative exhibits dealing with conservation and fish and wildlife in hydroelectric applications might grow into a full-blown exercise of the authority that Congress granted to the Commission under section 10(a) of the Federal Power Act.

There is another reason for vesting the FPC with this new authority and one that makes me feel a great deal more sanguine about the legislation before you. Right now, unless an EHV line is connected to a hydro project or is clearly interstate in character, it falls under the tender mercies of one of the State regulatory bodies and State laws on eminent domain.

In most States the utility derives its power of eminent domain from some form of transportation corporation law shaped in late 19th century and suited more to the needs of the robber barons than to the demands of a modern society. My direct experience in this has been limited to three or four States, but I am informed that this is generally true throughout the Nation. Now at the moment, under these laws, and the largely illusory protections extended by the State regulatory bodies, the citizen is devoid of meaningful protection. If there is judicial review of an action regarding transmission lines, it almost always boils down to deciding how much the citizen is to be recompensed for what he has just lost.

I would like to digress to just repeat some words of Senator Long at the hearings that you had on underground transmission lines that I think are particularly pertinent.

Senator Long said:

> When someone gets a certification of public convenience and necessity, it means he has a right to provide the public with a certain service and it means he has the Government on his side to keep anybody else from competing with him. Nothing ever irritates me more when he then proceeds to use that certificate to provide a monopoly service to the public and then tells us he doesn't want to be bothered by public convenience. That is the whole idea of it. That is what the word convenience is doing on that certificate. I am not saying that utility experts are callused, I just think it doesn't do any harm to be prodded into doing a better job than we are doing.

One advantage of vesting the Federal Power Commission with authority for these lines is the judicial review that's available when they fail to do the job. Only recently, the U.S. Court of Appeals for the Second Circuit took a hand in an FPC case and warned the Commission that it could no longer act as "an umpire blandly calling balls and strikes," but must offer the citizen affirmative protection. That was in the *Scenic Hudson Preservation Conference* versus *FPC and Consolidated Edison Co. of New York*, the Second Circuit Court of Appeals.

There is no indication that the FPC has really taken this seriously yet, but I suspect that they are going to get the message. With this sort of precedent building up, it is going to be true that the citizen will have a better chance of representation in actions that are before the FPC. I think that that will be a good development.

I hope that this committee will bear in mind the potent protection that judicial review gives the citizen who has to deal with a quasi-judicial independent Federal commission and will assure that this right is fully protected in the legislation that you report out.

The vital nature of judicial review was demonstrated very clearly in the *Consolidated Edison* case which I cited before. It was the only recourse that was effective, as a voice of the citizens who were concerned.

The legislation that you are considering here today is extremely complex and technical. Knowing the ways of Federal agencies, however, I favor S. 2140, which, as I understand it, would require certification of any extra-high-voltage line after full statutory hearing.

The other FPC bill, S. 2139, as I understand it, permits the utility to go ahead and build the line it desires under existing authority after 2 years. Now utilities have tremendous sitting power. They will tell you that if they don't get something they want by 1965, the whole world will go dark and then when they don't get it, they will just wait and revise their prediction as to the coming of Armageddon.

Two years is a long time to you and me, but it is nothing but money to utilities.

Another thing that disturbs me about the legislation before you is the provision in S. 2139 that the FPC is to be given the right to approve rules regarding rights-of-way for other Federal agencies administering land. As I understand it, this would give the FPC the right to change the rules that protect national parks and national wildlife refuges, among other things. Now I am prepared to believe that the

FPC may, in the future, develop a real sense of responsibility about land use, but I am not all that sure.

People in the electric power field, whether they are in the utility business or in the regulatory game, have one rather disturbing characteristic in common. They genuinely believe that there is nothing more important than power and more power. If you tell them that they are destroying a village or school site or an historical shrine, they will tell you about the need for progress and the beauty of a power tower and spinning generator. As far as they are concerned, progress means electric power.

I won't quarrel about the tremendous contribution that electric power has made to our civilization, but there are other things that are important, too, and other disciplines that must be respected.

Here again in my own district, we had an example of this overriding concern with respect to the power aspect of a power project when the lines as originally planned by the Consolidated Edison Co. in my district would have gone right through a developed school site in the village of Yorktown. It just didn't make any difference at all. This was the shortest way and the most convenient way to produce the power. And the other values that were concerned in terms of development of that community were in the eyes of both the regulatory agency and the utility definitely put secondary.

If I may, I would like to suggest that there is something missing from all this legislation that I consider to be quite important. Present law and precedent appear to be remarkably clear that the FPC is obligated to develop the cheapest and most economical power. Under this authority, the FPC has often made decisions that were based on mills of difference in construction cost, but did not consider the costs to the citizens and communities involved.

In the power starved 1930's this may have been a good idea. Now as the urban complexes grow, eating up our reserve land and making orderly community development essential, there are other factors than utility cost that are just as important. If the FPC is considering two routes, one that would destroy a community or a historic shrine and one that is slightly more expensive but that would interfere with no public value, then I feel that they ought to weigh the full public interest in making their decision.

I would hope that this committee would insert in the legislation that is reported out a directive that in approving or disapproving any given route the cost of the route to the utility will not be the only factor considered. I would like to see a clear congressional directive to the FPC to develop evidence of its own motion as to the effect of a proposed powerlines on the taxes, planning and health of the community and to weigh these less tangible costs equally with the tangible costs to the utility in determining a route.

I would also like to see a directive that requires the Commission, on application from an interested party, to weigh the relative costs of underground construction expense to the utility, but saving to the community and the preservation of scenic values and national beauty assets.

I thank this committee for this opportunity to comment on the legislation before you today. I think it is important legislation and I urge that you press forward to bring all extra high voltage lines

under the control of the FPC in such a way to offer citizens and local communities affirmative protection from the forest of towers and the spider web of wires that are threatening to destroy so much.

One further thing, I want to thank you on behalf of all the people for your diligent concern about an issue that cannot help but bring you into conflict with one of the biggest, most powerful and most ruthless economic forces in America.

At the powerline hearings in May, one man from Sudbury, Mass., said after his testimony that this was the first time in 6 years of fighting a giant utility that any public body had ever listened to anything he or his 12,000 neighbors had had to say. That is the highest compliment that I have heard a congressional committee paid and I believe you have earned it.

I want to thank you very much.

Senator NEUBERGER. Thank you for your persuasive argument and exposition of the problem faced by the spread of the extra-high-voltage lines.

Do you think that the legislation before this committee, if enacted, would do anything to forestall another blackout?

Mr. OTTINGER. I think it would. The commission itself feels it would. But it would bring under the jurisdiction of the Federal Power Commission, the various interconnections of power systems throughout the country and it would permit the FPC, as a part of their approval, to establish standards that the companies would have to meet with respect to reliability of service.

Senator NEUBERGER. You have made a charge about this great utility industry which the public has very little protection against, but isn't it a regulated industry and wasn't that the purpose of the Federal Power Commission to protect the public interest against overcharges, let's say, from utility companies?

Mr. OTTINGER. As things have worked out, all too frequently, as in the case of Consolidated Edison application before the Federal Power Commission in Cornwall, the only protection the public has really had ultimately, and this is a great expense and great inconvenience, is to go to court and require the FPC to meet its statutory obligations. Too frequently the regulatory agencies, and this is so, in increased proportion, as you get down to smaller units of government, are creatures of the utility companies and responsive primarily to them.

Naturally, the kind of people who are appointed to these regulatory commissions are experts in power, they generally come from the power field and it is very difficult for this kind of person, with this kind of background, to think in terms of other than just generation of power. I said I recognize the very great importance to the development of the entire country with the generation of power.

Today land use is becoming an increasingly important and critical consideration and the competing considerations of the public interest just have to be weighed as they haven't before. The State regulatory agencies in particular, and frequently the Federal Power Commission, have not had the mandate and have not had the concern that is required.

The Federal Power Commission is now showing that concern, with some prodding by the courts. The Federal Power Commission does have the mandate in section 10(a) of the Federal Power Act to consider the effect it is having on communities and on natural resources.

And I think that the trend is toward more consideration of the Federal Power Commission. An individual or a community anywhere in the United States is going to get better representation, a better weighing of competing interests in the establishment of new overhead extra-high-voltage lines before the FPC, with proper court review, than they will under the State regulatory agencies.

Senator NEUBERGER. The FPC differed yesterday in support of the bills with the representatives of the Department of the Interior about including the public lands that these lines were going to go over and I notice you emphasized that you would support the provision that the Department of the Interior retain control of rights-of-way over its lands because you think that they are more oriented toward the scenic values, is that right?

Mr. OTTINGER. I think that is so. One has to look, to some extent, to the constituency of these agencies. The Department of the Interior does have a conservation constituency, Federal Power Commission has primarily power constituents.

Senator NEUBERGER. The usual opposition to any attempt to enlarge the scope of the Federal Power Act is that the industry is already doing a god job and why don't you just let us alone and let us manage it ourselves. There seems to be a great reliance on the fact that we have the greatest consumption of electricity in this country of any country.

Whenever we discuss appropriations for further research in health, we are told we are the healthiest country in the world. Well, a study by the World Health Organization showed that we were not, and in electricity, maybe it is true we have more miles of transmission lines and all, but there is no reason why we couldn't do better, it seems to me, with the resources we have.

It reminds me that in Portland, Oreg., when the public utility districts were striving for establishment in some communities, the private utilities would come out with great ads which said, "Portland has the cheapest electric rates." And they would cite New York City, and Chicago, and other places and we always pointed out, why shouldn't we? We should have as we were closer to the source of power. So just because we do have a great span of transmission lines and electricity consumption doesn't mean that we couldn't strive to do better and have cheaper rates and still preserve the beauty of the country, it seems to me.

Do you see any conflict between State regulation and if we had Federal rights of eminent domain? Would this conflict, say, in New York with State regulation of utilities by passage of these bills?

Mr. OTTINGER. It would give the Federal Government overriding power. In New York State and I think in most other States, the pattern is quite complex. As I said in my testimony, in New York, the only protection of the public is how much they get paid for what is taken from them. Even when they resort to the courts, the State regulation just hasn't taken into consideration at all the problems of preserving natural resources in approving utility projects and that is, of course, unfortunate.

Senator NEUBERGER. The Federal right of eminent domain and Federal regulations might help to bring about a reduction of the number of these transmission systems. Interconnections will require some Federal regulation, it seems to me.

Mr. OTTINGER. I would think so; more and more we are going to regional systems of interconnection between the power companies to bring cheaper power and more efficient transmission. You certainly need in this situation, as was demonstrated by the Northeast power failure, some control that transcends State lines to assure that adequate safeguards of the public interest are maintained.

I would think this is a completely legitimate area for the Federal Government to act.

Senator NEUBERGER. Your testimony indicated you didn't have too much faith in S. 2139, that the past history of performance doesn't justify allowing the utility companies voluntary control. Do they ever take into consideration the other land uses?

Mr. OTTINGER. They have acted I think primarily, when put under pressure. In our own situation, the original application of the utility was to string lines overhead over the Hudson River, to take new rights-of-way through our land in Westchester. As a result of pressure placed on them through interested parties, eventually through the courts, they agreed to go under the Hudson River, to go underground for several hundred yards on either side of the river so as not to mar the view on the river, and to use existing rights-of-way. They wanted to doube the size of the rights-of-way.

The FPC under pressure required them to use existing rights-of-way. They started out without much of a show of concern for the other values, only concern for going the shortest distance, the quickest way. It was due to the regulatory powers of the Federal Power Commission and the actions of interested groups in going to court that great improvements were made.

Now the utilities have undertaken to put the entire plant underground under the Hudson River so there have been substantial improvements made. But they didn't do what eventually appeared they could do in order to protect the natural values that they were effecting and the communities that were concerned. So the efficacy of regulation in this field I think is well demonstrated.

Senator NEUBERGER. One of the things that interested me in the conflict between the Department of the Interior testimony and the Federal Power Commission was over this rights-of-way and eminent domain over public lands and in the argument of the Chairman of the FPC, he said it would be necessary or convenient for them to have this right of eminent domain over public lands because when the utility company was proposing its expansion, its extra-high-voltage lines, it needed to know the most direct route.

And as I said that is exactly what we are trying to protect. The most direct route is usually the most detrimental to some of the scenic beauty qualities and here is where we need a little give and take, it seems to me.

Mr. OTTINGER. I couldn't agree with you more. I think the same is true with respect to the highways. We have seen this time and time again. The engineers and the experts are trained, but their whole background is just in trying to go from one point to the other, the shortest, cheapest way.

In the case of the power company, the training is to produce power at the lowest possible cost to the utility. One can't necessarily blame them for that, that is their job.

There has to be an agency that can intervene in this process and say no, this isn't the only consideration that has to be taken into effect. The shortest point of transmission that happens to go through the center of a park or center of a schoolyard isn't necessarily the best.

The cost that is entailed in going around this facility that is important to the public interest may well be worth paying.

Senator NEUBERGER. Do you believe the States have authority to regulate a great interstate activity like extra high voltage.

Mr. OTTINGER. I think they clearly do not and particularly so, as you so ably pointed out, when we get these regional connections between power system growing by leaps and bounds. Each individual State just can't take the overall view that is necessary to provide effective regulation.

Senator NEUBERGER. Some legislation is introduced even though maybe something could be accomplished without the legislation. I am sure there would be an honest effort in many cases. But we know that complex of regulatory bodies can change. We might have perfect faith that they would do everything they could, but who knows, after 1968 or another few years, there might be a different attitude. In my political lifetime, I have seen these changes come about.

So, we do appreciate your excellent testimony in support of these two bills.

Mr. OTTINGER. Thank you, and I would like to compliment you, again, on the wonderful job you are doing in this field, Madam Chairman.

Senator NEUBERGER. Thank you.

The next witness will be Mr. Louis Waldman, of Pennsylvania, Chester County Conservation Committee, who, I believe, has appeared here before in connection with the underground transmission lines; did you not?

STATEMENT OF LOUIS WALDMAN, CHAIRMAN, CHESTER COUNTY CONSERVATION COMMITTEE, INC.

Mr. WALDMAN. That is correct.

Senator NEUBERGER. Glad to see you back.

Mr. WALDMAN. Thank you.

Because of the short notice that I had, due to a postal delay I don't have any written testimony for which I appologize. But I would like to ask that the committee consider putting in this record that testimony which I gave on May 6 of this year, which I feel is applicable in this area because it is a statement covering the overall subject.

Senator NEUBERGER. That dealt with different bills.

Mr. WALDMAN. But the background material, I think, would also be useful in discussing these bills.

Senator NEUBERGER. Because your concern with the three bills before us has to do with the land use provision of them, is that right?

Mr. WALDMAN. Correct.

Senator NEUBERGER. We will be glad to consider that. We will place that testimony in the rceord.

(The statement referred to follows:)

STATEMENT OF CHESTER COUNTY CONSERVATION COMMITTEE

Mr. Chairman and Members of the Committee, the issues before us today, it seems to me, are twofold. One—why should electrical transimission lines be placed under ground? Two—why are we pressing for federal law?

In the last several years there has been an ever increasing concern on the part of the Government officials on all levels, professional conservations and the public at large to protect our natural resources, not only for this age, but also for the years to come.

On February 8, 1965, the President of the United States, in a message to Congress said, "I am hopeful we can summon such a national effort. For we have not chosen to have an ugly America. We have been careless and often neglectful. But now that the danger is clear and the hour is late, this people can place themselves in the path of a tide of blight which is often irreversible and always destructive."

Millions and millions of acres, unless this situation is changed by this pending legislation, will be consumed by transmission towers and line as part of the gigantic national grid system now being constructed.

With all of the national, state and local emphasis on planning, the utilities, in their position of being licensed monopolies, either feel that they are above such efforts or stubbornly resist cooperation in planning because of their exclusive protected position. Therefore, any attempts made to protect the natural beauties of a given area, to fit utility expansion into an existing comprehensive plan, or to protect and maintain the tax structure on a county level is met head-on by the utilities and their nineteenth century thinking.

Why do we need federal legislation regarding research, demonstration and installation of extra high voltage transmission cable? Because of the very nature of the national grid system and the buying and selling of blocks of electrical power from one company to another, from one state to another, we feel that this is clearly an interstate matter and consequently the regulation of transmission Rights-of-way and underground cable is an obligation of the federal government.

Most state public utility commissions do not have the personnel who are technically qualified or the funds to carry out independent studies with regard to highly technical questions of this nature.

The Public Utility Commission in the State of Pennsylvania has been derelict in the duty to the people of that Commonwealth by continually rubber-stamping the wishes and desires of the utilities which they theoretically regulate and the courts in the state of Pennsylvania have been placed in a position of following an old line of cases and therefore seldom, if ever, reverse the decision of the Public Utilities Commission.

There is, at present, no regulatory body who will claim jurisdiction over the Rights-Of-Way for electrical transmission lines. The Pennsylvania Public Utility Commission states that it is "the management of the company's prerogative". The federal power commission in the letter signed by Chairman Swidler, dated September 10, 1964 states that "other than for primary lines associated with license hydroelectric developments, the Federal Power Commission has limited jurisdiction, and seeks to accomplish these purposes through voluntary cooperative efforts". The Department of the Interior in a letter dated February 25, 1965 under the signature of The Honorable Secretary Udall, stated "the bureau found that the lines were not required to hook the licensed project into the distribution system and therefore did not require a license to be issued by the Federal Power Commission". Other than consulting with the Federal Power Commission on the licensing of projects on navigable streams, the Department of the Interior has never exercised jurisdiction or expressed leadership in matters of this type.

Almost two years ago small groups of citizens, located on the township level of government, became aware of Project Keystone which involves the construction of 83 miles of a 500,000 volt electric transmission facility beginning at a proposed Peach Bottom sub-station in Peach Bottom township, York County, Pennsylvania and extending generally Northeastwardly through Lancaster, Chester, and Montgomery Counties to a proposed Whitpain sub-station in Whitpain Township, Montgomery County, Pennsylvania. This 83 miles will be a portion of a national grid of 500,000 volt electric transmission facilities which will serve urban local centers in Pennsylvania and neighboring states along the eastern seaboard.

This grid will provide a high capacity transmission link between the transmission systems of Philadelphia Electric and other major private utilities operating in the Pennsylvania-New Jersey-Maryland Power Pool.

In the summer of 1964, these small groups of citizens began to investigate the proposed Keystone Project. Our initial investigation found that the Philadelphia Electric Company had been busily engaged in the purchase of property in Chester County for almost a year prior to any group or governmental knowledge of the extent of the project itself. We immediately sought to find the governmental agency responsible for the review, supervision, and regulation of the Keystone Project. Gentlemen, there is no government agency in the state of Pennsylvania or in the federal government which has regulatory jurisdiction in this matter. As citizens we are powerless against the whims and caprices of the Philadelphia Electric Company.

At this point we would like to make it quite clear, as our opposition to and experiences with the Philadelphia Electric Company are unfolded before this Committee, that at no time has the Chester County Conservation Committee spent its labors attempting to eliminate the Keystone Project itself. We have always taken the view that the power supplied by this proposed project will be necessary for industry and the consumer. We were primarily interested in finding a better way. We were concerned with ascertaining the necessity for the proposed route, as a means of conveying low cost power, and whether there were any alternatives which would provide the same service without putting long term conservation in jeopardy.

In accordance with this approach we feel it is important that the records of these hearings convey the efforts of the Chester County Conservation Committee to gather pertinent data in order to show that the geographical location of the proposed line is not necessary to convey low cost power, and of immediate interest to this committee, to show the total disregard of the Philadelphia Electric Company toward the efforts of the citizens and government of Chester County to seek their cooperation.

I believe our experiences will show that in the absence of strong federal or state regulation that the Philadelphia Electric Company has attained powers which allow them to ignore any reasonable efforts toward cooperation with any level of government because of the lack of any effective regulation it has been able to put itself above duly constituted government.

From the very beginning of our investigation we sought the cooperation of the Philadelphia Electric Company and have made repeated attempts to meet with them. Everywhere the doors were closed. Even the County Commissioners, who were merely seeking information on the plans, as they applied to Chester County, were denied access to the plans, as if the County Commissioners never existed.

In addition to our attempts to discuss this problem with Philadelphia Electric we found the door closed in our efforts to obtain independent technical knowledge in the field of high voltage transmission. We sought appointments with Cornell University Research Center, which was responsible for the development of cable capable of carrying 345,000 volts underground; the Anaconda Copper and Wire Company; The General Cable Company; The DuPont Company, in regards to dialectrics; The General Electric Company; and A.S.E. A., a Swedish Firm which maintains offices in the United States.

In fact the Anaconda Copper and Wire Company, and the Okonite Company have widely advertised their competency in the field of high voltage transmission and have discussed openly, through these advertisements the feasibility of high voltage undeground transmission. We mention these points to establish the reputation of the sources we attempted to contact in our quest for better understanding of the technical problems involved in high voltage transmission. With all of these parties our initial contacts were encouraging but in a few days time the door was closed with statements issuing forth such as, "we don't want to be embarrassed" or "we don't want to get mixed up in the politics involved." We even have a letter from the meteorological service of the Franklin Institute in Philadelphia, Pennsylvania stating that its experts couldn't testify in certain matters dealing with climate, because one of their biggest contributors was the Philadelphia Electric Company. And Gentlemen, this difficulty of the citizen to obtain information is not just our problem. Similar citizens groups in New Jersey and New York are spending untold time and large amounts of money in attempting to find a better way with the same 500,000 volt line which will affect those states after it leaves Pennsylvania. You might remember the case of the City of Los Angeles, where the municipally owned power company

attempted to gain objective technical information in an investigation. It had to fly an unbiased expert from London, England because it could not find an expert in this country. There are numerous cases throughout the United States, where private utility companies, operating with almost complete freedom from regulation are closing doors on honest citizens efforts to gain the facts.

In the absence of federal regulation an impossible burden is put on diligent and responsible citizens who are not apathetic, but want to contribute to their society.

Our committee has spent many months and several thousand dollars in legal and technical fees. If the proper power were given to the responsible federal agencies this would not happen. We don't need less regulation; we need more regulation.

Our committee finally found an objective technical expert after seven months of searching. This expert, Mr. Alexander Lurkis, of Alexander Lurkis Associates, is a highly competent electrical engineer, from New York City. His findings show that an existing transmission line, owned and operated by Philadelphia Electric Company; and with a right of way of 315 feet, connects practically the same origin and destination as the proposed new line. Mr. Lurkis presented five alternatives all of which include the existing line without the need for an additional right of way. These alternatives far from being more expensive for the Company will be less expensive both in capital and operating costs.

These exhaustive findings were presented by the County of Chester before the Public Utility Commission in hearings extending over a period of six months.

In June of last year, an oral argument was presented before the full Public Utility Commission in Harrisburg, Pennsylvania. In the course of these hearings it was admitted by counsel for Philadelphia Electric that the proposed line could be put on the existing right of way.

In connection with our investigation of the use of the existing right of way we offer in evidence a letter from Federal Power Commission Chairman Swidler which states in part: "The Federal Power Commission is actively aware of the opposition to overhead transmission lines and has encouraged the industry to effectively utilize the full capability of all rights of way in order to reduce the number of lines which must be constructed. This can be accomplished in several ways. Such as (1) raising the voltage of the lines, in which case the power capability increases by the square of the voltage; (2) substituting towers which carry two circuits rather than one; . . ."

The key word in this statement is "Encouraged" for it shows the inadequacy of federal regulation to control, in our case, what amounts to a land grab of the rural country side of Chester County, at today's prices. Also in this matter we have sought the aid of the Secretary of the Interior in connection with the President's declaration of natural beauty, and we have personally discussed this matter with several people in Secretary Udall's department. They have expressed great interest in our problem but all are powerless to initiate action. The Department of Interior is in the same dilemma as the Federal Power Commission.

Gentlemen, a decision was rendered by the Pennsylvania Public Utility Commission on July 26, 1965 in favor of Philadelphia Electric. This decision fully accepts the arguments presented by the Utility, and doesn't even pay lip service to the evidence offered by the counties expert, Mr. Lurkis. Here again is proof of the need for greater federal regulation.

Probably the single key phrase controlling the decision of the Public Utility Commission in its order of July 26 is: "In regard to the selection of a route to accommodate the proposed line, we are satisfied that the proposed route is the result of extensive, painstaking, and competent design by applicant. Moreover it should be recognized that this is a matter which is initially the prerogative of applicant's management."

If we examine this phrase closely, we will find additional need for federal regulation; that will remove the presumption that management decision is best for all concerned—the public, the landowner, and the utility company.

This commission has stated that it is satisfied with the applicant's exhaustive studies, but disregards the exhaustive studies of the county's expert. Why? In our case, and I'm sure in many others, the State Public Utility Commission is deficient in its technical staff, and as a result depends on the utility's staff for expert advice. With this in mind if we turn to the Public Utility Code of Pennsylvania, we find that the overriding duty of the P.U.C. in exercising its regulatory powers is to protect the safety and welfare of the citizens. Here is

a basic conflict which is present in many states in this nation. By depending on the utility for expert advice, the State Public Utility Commission is abrogating its primary function which is to weigh the evidence. There can be no evidence to weigh if the design of a transmission line is the prerogative of the utility in the first instance.

If you review the Public Utility Code order of July 26 this abrogation will be evident. Further we believe it is interesting to note that the courts of Pennsylvania slavishly follow the older cases dealing with the installation of high voltage transmission lines, namely that the prerogative of management is paramount. This means that the installation of any lines is a matter to be left up to the whims of the utilities, without effective review by any governmental agency.

In addition to the inadequacy of the Pennsylvania Public Utility Commission, no agency in our state has jurisdiction over an entire project such as this proposed 500,000 volt high transmission line. Where does this leave the people? The answer is quite obvious.

I think it is quite clear that already the utilities have too much power to affect the future of our citizens. We should consider legislation effecting more regulation to protect the citizens of this nation.

Again we emphasize that our particular situation in Chester County, Pennsylvania is not isolated and that federal jurisdiction properly exercised could have prevented the inequities in our case.

The Keystone Project is a part of a national power grid. We have already stated that many states on the Eastern seaboard are involved.

More far reaching is the greater power reverting to the hands of the utilities. If you want to protect the citizens then we suggest you examine the nature of this National Power Grid. The establishment of a national grid makes the transmission of electricity more and more an interstate concern. Private utilities will be supplying more power back and forth over state lines, as a result of these interties.

Our local example is the Pennsylvania-New Jersey-Maryland power pool. There now exists a lack of uniformity in state laws regulating transmission. One of the main objectives of the rapidly evolving power pools is to create uniformity in interstate electrical transmission. In order to obtain uniform jurisdiction over the entire national grid we must have greater federal regulations, not less. If the utilities really want greater efficiency on these massive interstate lines then they should welcome federal regulation which would eliminate conflicting jurisdiction among the states involved and achieve the uniformity recently gained by the approval of the Monroney Bill to place the petroleum industry under I.C.C. jurisdiction.

Federal regulation so constructed would not by any stretch of the imagination constitute federal interference in state government. The matter concerns interstate utility operation and is properly a federal matter.

It is our opinion based upon the foresaid that the only reasonable solution to this problem is to provide federal sponsorship of a program of research and demonstration regarding extra high voltage underground transmission cable and we ask and encourage this committee to vote for the passage of Senate bills 2507 and 2508.

Mr. WALDMAN. I just received copies of these bills yesterday, and have not had an opportunity to really study these. But in S. 2139, some things bother me. To quote the bill:

> That it is the purpose of this Act to encourage and facilitate the construction of extra-high-voltage electric transmission lines which are in the public interest and to avoid delays in construction of such lines in order to help make electric energy available throughout the Nation.

And so on and so forth.

Perhaps there was a specific reason I am not aware of for writing this type of language into this bill. However, it has been our experience in Pennsylvania that the utilities have never had too much difficulty in obtaining rights-of-way or in putting through their particular plans and I respectfully question that language as to what effect it might have really in even bolstering the utilities present position, which we feel is quite strong.

Senator NEUBERGER. Now this situation you refer to, they never had any block to establishing their lines because of State regulation; isn't that so?

Mr. WALDMAN. That is correct.

Senator NEUBERGER. State utility commissioner sanctioned——

Mr. WALDMAN. That is correct. To review very quickly in Pennsylvania, we do have a public utility commission, which is charged with the task of seeing to it that the public interest is carried out in matters of this nature and in my previous testimony, it is our feeling and we fell we can substantiate this——

Senator NEUBERGER. As it is spelled out that way, carried out the public interest and interpreted that the public interest is electricity, or is there a statement that would show that the public interest regarding land use is also inherent?

Mr. WALDMAN. No, there is nothing about land use whatsoever in the duties of the public utility commission per se. It strictly relates to the most economical, safest system. The only way really they can enter into taking the utility to task is by finding that the utility has been "wanton" or "capricious"—these are two words that are used in the code and it is very difficult to find and to prove in court that one is wanton and capricious. I feel quite strongly that this is the very reason that these two words were selected in the particular code which exists in Pennsylvania.

Incidentally, I might say that when I was here last May, we were waiting for our particular case to come before the supreme court in Pennsylvania and the supreme court in Pennsylvania has turned the case down. They will not hear it. So we are now proceeding with the case which has to do with the Keystone project, which is an interstate project. We are going into the Federal courts. As I look at this legislation, 2140 and 2139, it seems to me No. 1, that somebody has to take jurisdiction over rights-of-way and perhaps this is the conveyance under which this will be taken care of.

In Pennsylvania and in many other States, there is no bona fide jurisdictional body that has any regulatory power or control over public utility rights-of-way. It is not restricted to electric utilities, it covers pipelines as well. And so consequently, in order to get some rhyme or reason out of this whole thing, with complete change in the electrical industry, with the advent of the grid systems and so on, it seems that we must have some regulatory body that has overall regulation on these rights-of-way.

And I know that at present, the Federal Power Commission does not, since they only have regulatory powers over what they term as the primary line. Most of the States will not pick up the responsibility of this jurisdiction, and so consequently, it is left to the local governments and the local citizenry to try and carry on as best they can, through the hearings on a local level, through the PUC's, or through the court systems, as we are doing now.

There is one thing and perhaps I missed it in reading these bills but there is something I would like to bring up for your consideration and that is the fact that the burden of proof is put upon the citizen. When you confront one of these utilities, you are in essence really in a brawl with the whole industry. You don't simply fight Philadelphia Electric Co., you fight the whole Edison Electric Institute, all of their

membership and all of those who are sympathizers. Consequently, a handful of citizens must raise several thousand dollars, and they must find experts to testify, which is difficult, because most of the experts have a tie of some sort with the utilities.

I would think that some consideration should be given in matters involving difficult technical decisions. If the Federal Power Commission would have jurisdiction in this area, private citizens would have something available as, say, a public defender in a sense, from a technical standpoint. Without this there is an almost insurmountable wall in front of progress on the citizens' part. Many people give up before they really start, thinking it is an impossible task to fight a situation such as we have in Chester County, Pa.

There is one other thing which I would like to bring up. In Chester County, Pa., we have an airport, I think we have local, State, and Federal grants, totaling approximately $1.5 million. The utility company in this particular case took no cognizance whatsoever of this airport and will run the line very close to the end of the runway. The runway runs in an east-west direction and the omni beam, which is the directional or navigational bearing instrument for airplanes, is on the west side of the proposed powerline; the end of the runway is on the east side.

The Federal Aviation Agency has a glide path restriction or glide path rule, I guess one would call it, whereby they determine through experience a minimal area that you must have in order to achieve a certain angle of glide path when you are coming down in an instrument landing on a stormy or foggy day or something of that nature, where you have very little visual contact with the ground.

When this line was proposed, the tower line in relationship to the end of the runway allowed this glide path regulation to prevail. But since that time, we have an extension to this runway, which has been in the paperworks for some time, so that it was not an unknown quantity. This runway will be extended west or toward the proposed tower line, which now makes it highly questionable as to whether or not this glide path regulation can be met.

So we, that is the county of Chester, have hired an aeronautical consulting engineer who has had experience in the Federal Aviation Agency cases and things of this nature, and in his opinion, he feels there is a very good chance that this airport conceivably might not be operational from the standpoint of instrument-type landings.

Senator NEUBERGER. Who has the right-of-way? Who owns the right-of-way on the proposed powerlines? How do they get the right-of-way there?

Mr. WALDMAN. That right-of-way was purchased in fee from an individual. It was not ground that belonged to the county, it was a farm, as a matter of fact, a working farm where that land has been purchased.

Now it is my understanding that apparently the Federal Aviation Agency has no ability to enforce their recommendations. They can only recommend, as I understand, that certain things be done, and that tower line be moved further to the west away from the area of interference as far as this glide path regulation is concerned.

If this is true, with the power of the utilities, we know—and I am talking of their lobbying power—while it is inconceivable to the logical

mind, it is possible that this airport may end up being a nonoperational airport as far as being an all-weather airport. And this poses a great problem, because one of the basic reasons for having this airport was to frankly, to draw industry and to keep industry.

We have labor force, a tax structure, many other ramifications that enter into the attraction of good, stable industry. We have an organization in the county which is supported by the county and by corporate and individual funds, which does nothing but promote the growth of present and attraction of new industry into Chester County.

And consequently, if this airport is restricted, this is going to restrict our efforts and put another negative aspect into Chester County.

Senator NEUBERGER. If S. 2140 were enacted, then, it would give a mandate to the FPC to review the plans for construction of extra-high-voltage transmission facilities and, I would suppose, they would call in representatives of the FAA to consult in an area of this kind. But at least we would be assured they were considering it.

Has the FPC had anything to do with this now? Is this an extra-high-voltage line?

Mr. WALDMAN. This is a line which starts near Jeannette in Pennsylvania, one branch going across, one line going across Pennsylvania up into New Jersey and New York, the other one coming down through Lancaster County across the Susquehanna.

Senator NEUBERGER. Do you think the Federal eminent domain proceedings would be more meaningful than the present State domain proceedings? You think that the Federal Government would take more of these things into consideration than a State does? Don't you think the State would be more interested in it than the Federal Government?

Mr. WALDMAN. Well, this is perhaps as it should be. I think that there is a situation here where perhaps a change of venue has an importance.

Senator NEUBERGER. Of course, we anticipate that what is going to happen is that the FPC would visualize it in the context of regional service rather than as the State considers it within the State.

Mr. WALDMAN. I have the feeling that this is somewhat on the right track, although there is some of this language I am a little dubious about, not so much as to what it does today, but how it will affect the situation tomorrow.

Senator NEUBERGER. I think that is what it is for, is to protect the situation tomorrow.

Mr. WALDMAN. I hope it is.

Senator NEUBERGER. Because we visualize an expansion of extra high voltage. So, that is exactly what people who propose these bills have in mind: that, as we see an expanding use of the high voltage, that we will be forewarned.

Mr. WALDMAN. Right, which is very important.

Senator NEUBERGER. And that is exactly what they are aiming at.

Mr. WALDMAN. We have a case in Pennsylvania where the line was taken to court in Dauphin County, where the appeal was made to the court to decide once and for all whether this was an intrastate or interstate line. And the court, we feel, for reasons which were a little bit shakey, the court deemed that it was an intrastate line.

Well this kind of thing could be conceivably solved if there was a Federal Power Commission situation here, where they would take jurisdiction, hold hearings and things of this nature.

Senator NEUBERGER. Thank you very much for your contribution.

Due to the number of transportation difficulties, our witness list has been curtailed somewhat for today.

The committee will recess until 10 tomorrow.

(Whereupon, at 11 a.m., the committee was recessed to reconvene at 10 a.m., Friday, July 29, 1966.)

EXTRA-HIGH-VOLTAGE ELECTRIC TRANSMISSION LINES

FRIDAY, JULY 29, 1966

U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C.

The committee met at 9:08 a.m., in room 5110, New Senate Office Building, the Honorable Frank J. Lausche presiding.

Senator LAUSCHE. The meeting will come to order.

This morning's hearing is the last of three on S. 1472, S. 2139, and S. 2140, bills to amend section 202 of the Federal Power Act to give the Commission the responsibility for reviewing plans for the construction of extra-high-voltage transportation facilities.

Last Wednesday the committee heard from representatives of various Government agencies who favored, in the main, either S. 1472 or S. 2140.

On Thursday the committee heard from various individuals speaking for conservation and planned land use.

This morning's first witness will speak on the subject of conservation and then we shall hear the witnesses of their industry.

Legislation of this nature was first introduced in the 87th Congress. Since then the need for consideration of proposals of this nature has grown as the technology of the industry has expanded. Not only does EHV transmission involve economics and reliability within the electric industry, but it has an influence on the lives and property of thousands of individuals in hundreds of communities.

The 1964 National Power Survey, a joint effort by the Federal Power Commission and the utility industry, recommended that consideration should be given to the amending of the Federal Power Act to provide that a licensed transmission line should be permitted to condemn the necessary rights-of-way in a manner similar to other condemnation provisions of the act.

These hearings are a study of such a proposal.

State regulations are an important factor in this industry, but no single State can give full consideration to all of the factors which must be considered in a decision on interstate transmission lines.

Assistant Secretary of the Interior, Kenneth Holum, in his report on these bills said:

> It is clear that there must be some means of coordinating and controlling the proliferation of non-Federal EHV transmission lines which will inevitably and quickly occur. To do otherwise would be to expose the American economy to the possibility and perhaps probability of insufficient and badly developed utility development. This we cannot afford.

The first witness this morning will be Spencer Smith, secretary of the Citizens Committee on Natural Resources.

STATEMENT OF SPENCER SMITH, SECRETARY, CITIZENS COMMITTEE ON NATURAL RESOURCES

Dr. SMITH. Mr. Chairman, I am Spencer Smith, secretary of the Citizens Committee on Natural Resources.

Of the several measures now before the committee, we wish to indicate at the outset our strong preference for the principles embodied in S. 1472 and S. 2140, which would amend the Federal Power Act by extending the authority of the FPC over the construction, extension and/or operation of extra-high-voltage lines in interstate commerce.

There has been extended discussion for a number of years over the facilities required for the transmission of electrical energy, especially when involving long-distance transmission. No one, to the best of our knowledge, has argued seriously against transmitting extra-high voltage over long distances because of the greater economy, which is manifested by enlarging the marketing area and enhancing the advantages of interconnecting power systems. Such a procedure has resulted in the creation of power pools which cover ever-increasing geographical areas. Thus, the technical and economic advantages have been evident for some time. We do not consider these matters to be in dispute.

Rather, it is because of these same technical and economic advantages that will expand and extend these transmission systems in the future, as they have in the immediate past, that require public supervision and regulation. It is not our task to discuss the technical features in which our competence is limited but it is very much our concern as to the impact on the total environment that the construction of transmission facilities will have. The impact is evident already in some areas of the country and in some cases the locations do not appear to serve the total public interest. When the physical landscape is involved, as well as so many other features of our environment including scenic enjoyment, a balanced and representative view must prevail if the public interest is to be served.

The construction of EHV transmission lines is a part of the entire problem of our complex interdependent economy, resplendent with the latest technological devices and scientific miracles and imposed upon a limited land base. Also, the President and his administration seek strenuously to raise the quality of our environment. No one is suggesting that improvements in our technical skills, which lead to the production and consumption of more goods and services, should be abandoned because of their intrusion upon the landscape. What is being urged is that the location and utilization of these technical appurtenances must be better ordered—better planned—in order to consider to the fullest the other parts of our environment that are affected.

The approach suggested by some is to have the Federal Power Commission exert moral suasion upon those who would construct interstate EHV transmission lines in order to protect properly the public interest. This would not, in our judgment, be an appropriate vehicle. A voluntary procedure would establish a debate between those who are contemplating the construction of these lines and a public agency that urges them in one direction or another. Such a procedure is in contradistinction to one that would grant authority to a public body which would determine the justification for certification and which would provide also for the expression of public concern from

interested and/or affected citizens. The Commission, at this point, is in a position to make a decision upon the background of these public hearings. There appears to us to be little question as to the superiority of the latter over the more restrictive discussions of the former. Commissioner Charles R. Ross emphasizes this problem in his statement placed in the Congressional Record of June 14, 1965 (No. 107, pp. 12960–12961) by the chairman of the committee, Senator Magnuson, by pointing out the coming complexities that are sure to be faced:

> With the acquisition of right-of-way becoming increasingly difficult to secure, with more and more local and State governing bodies such as zoning and planning agencies becoming involved, and with the local homeowners increasingly fearful of arbitrary taking under the guise of electrical interstate needs, the necessity of a forum becomes indisputable.

It would appear to us that as greater and greater demands are made upon our natural resources and as these demands engender highly complex relationships among these resources, enormous challenges to appropriate planning appear inevitable. Such planning cannot be relegated to the Federal Government alone, nor should it be the exclusive province of the State and local government entities. Private enterprise, in cooperative with the various governmental units, must, in their own long range self-interest, turn some of their funds and imaginative powers to the end of greater compatibility with other elements of the community—in the instant case, the design of facilities, the care and choosing a location and, perhaps in the not too distant future, serious consideration of underground placement.

We are not so sanguine as to suggest that even if the industry and the Government units were to comport themselves in such an ideal fashion that the problems of controversy would be resolved. We do feel, however, that the climate is much improved in which a solution to such controversial problems is sought. The public is not unresponsive to demonstrated efforts on the part of industry to achieve results over and beyond their immediate industrial goals. Neither is the public unresponsive when industry fails to consider seriously the effect of their activities upon the public which they serve. If some companies persist in the attitude that they must keep unto themselves the final determination of the construction, location and operation of the EHV transmission lines, they likewise have accepted a burden that in the long run will be oppressive.

The concern for the delay in seeking certification by the Commission and perhaps the failure of the Commission to appreciate their particular financial problem cannot vitiate the more important consideration of the public being given the opportunity for discussion. There is no incontrovertible proof that the delay will be ever more onerous on the company than the absence of public hearings and a careful discussion by a public body on the public.

The economic reality has been evident for some time that control of facilities that generate power do not control the industry. It is the control of transmission that vitally affects the destinies of the consumers. A significant rivalry between the public, private, and Federal transmission systems has been growing for some time. Left untended such a rivalry could pose not only serious consequences in achieving the appropriate intertie complex, in order that a maximum saving be

achieved by the consumer, but the impact on the other elements of our social environment could undergo serious harm. It seems inescapable, therefore, that if all parties are to be served effectively that some means of adjudication are mandatory.

We hope the committee in its deliberation of means to solve these problems will support strongly those measures which require certification by the FPC for the construction of facilities for the interstate transmission of electric energy.

Senator LAUSCHE. Dr. Smith, the Citizens Committee on Natural Resources has what type of membership?

Dr. SMITH. Included in our membership is our Chairman, Dr. Ira Gabrielson. He was an early appointment to the Fish and Wildlife Service. He is a biologist. Then we have economists, biologists, ichthyologists, and ecologists.

Senator LAUSCHE. Who is your ecologist?

Dr. SMITH. We have two different people involved in ecology, one is Mr. Siguard Olson, the other is Mr. Lloyd W. Swift who has been both a forester and an ecologist. Mr. Charles Callison has also been involved very much in both wildlife and wildlife ecology.

Senator LAUSCHE. Has your organization issued any papers on the subject of an imbalance developing in the ecology?

Dr. SMITH. We have not as such. Several of our members have published. Mr. Drury published a paper not too long ago.

Senator LAUSCHE. What is the conclusion he reaches about what civilization is doing to nature and what the likely results will be in the future?

Dr. SMITH. Well, it is pretty horrible, Mr. Chairman. That is the best way I know to sum it up. One example I recall was taking a very small area and then purposely doing certain, what was referred to in the article, civilized tricks. Instead of putting fish in a pool or taking the fish out, you kill the fish for example and then you have a mosquito problem. If you kill the mosquitoes, you have a fish problem. This was a little local experiment to show that every kind of alteration that you make in nature begets you other kinds of problems.

Senator LAUSCHE. Do any of these papers discuss the subject of the denuding of the land of the vegetation, trees, and grass and what the result is?

Dr. SMITH. We have two people who are experts in that area. One is Dr. Dewey Anderson, who has done a great deal of work on this, and another is a retired forester, Mr. C. Edward Barrow. We also have two former assistant chief foresters, Mr. Raymond Marsh and Mr. Chris Granger, who have done a great deal of work in this area.

Senator LAUSCHE. Now getting back to your membership, you mentioned the scientists that you have within the organization. What other type of membership do you have?

Dr. SMITH. Well, we have what we call a contributing membership who are representative of about, I think, four States. The total membership is relatively small, we are not a large membership organization. We were created by Dr. Gabrielson and others trying to gather about them several scientists and people interested in conservation.

Senator LAUSCHE. In substance it is my understanding that the position of your committee is that as between relying upon the results

that can be obtained through moral persuasion on the one hand and relying upon laws that will mandatorily require a course, you believe that the former cannot be depended upon but the latter is the course that should be followed?

Dr. SMITH. We do, Mr. Chairman. There are serious difficulties, it seems to me, in the moral suasion. I remember from my own past in a price control agency where we would use moral suasion and in a sense many of the most responsible people in the industry would adhere to this and act responsibly, and they would have to sacrifice their own economic lot, so to speak, to those who did not.

It would seem to me in a voluntary system you place an enormous burden on each individual. I think perhaps in terms of equity, as well as in terms of the final result, the mandatory provision is more proper.

Senator LAUSCHE. I am a deep believer in allowing the maximum of liberties for our citizens, except there comes time when the Government must step in. I flew from Washington to Chicago and back from Chicago to Washington Tuesday and Wednesday. I flew over Ohio and Pennsylvania and I saw the scars of the strip mining. And I just couldn't help but say to myself, what type of civilization are we living in, with trees and grass and shrubs being removed and nothing but the sterile rock being exposed.

Dr. SMITH. Mr. Chairman, we have proceeded in the Congress for as many years as I have been connected with the committee, which has been from its outset in 1954, to get the most minimum legislation relative to strip mining activities, and we have not been very successful. We weren't even able to get a study of the condition of the ground.

Senator LAUSCHE. While I was Governor of Ohio, we built one turnpike and we are about to build the second one. I, of course, flew on the route that was to be chosen. And it was uniformly followed, "Go through the wooded areas." There is an east and west route on the north, an east-west route on the south, farmland facing on the north road, farmland facing on the south road. In the middle between the two is wooded countryside. That is where the turnpike went. A 300-foot wide strip every blade of grass and tree taken out.

Now, of course, when you lay the powerline, the swath is there, the trees are gone. The grass can come back a bit, it is not as bad as strip mining. Thank you very much, Dr. Smith.

Dr. SMITH. Thank you, Senator.

Senator LAUSCHE. Mr. Larry Hobart.

STATEMENT OF LAWRENCE HOBART, LEGISLATIVE DIRECTOR, AMERICAN PUBLIC POWER ASSOCIATION

Senator LAUSCHE. Mr. Hobart represents the American Public Power Association.

Mr. HOBART. Thank you, Mr. Chairman.

With the chairman's permission, I would like to insert my full statement in the record.

Senator LAUSCHE. Yes; you may do so.

You may proceed.

Mr. HOBART. I will attempt to summarize briefly the points that we make in our statement.

My name is Lawrence Hobart. I am legislative director of the American Public Power Association, a national trade organization representing 1,400 local publicly owned electric utilities—mainly municipal systems—in 46 States, Puerto Rico, and the Virgin Islands. The association's offices are located at 919 18th Street NW., Washington, D.C.

A basic goal of the American Public Power Association is to assist in making available "electric power in abundant quantity and at fair and reasonable cost." One of the ways in which APPA attempts to achieve this goal is by—

seeking comprehensive development of our national power resources and full use of technical advances to provide low-cost power for all Americans.

In accordance with these aims, delegates to the association's 23d annual meeting held in Boston in May 1966, approved a statement of policy declaring that—

The American Public Power Association endorses the principles of S. 2140, which would require all electric utilities to obtain from the Federal Power Commission a certificate of convenience and necessity for extra-high-voltage interstate transmission lines but urges that such legislation (*a*) authorize the Commission, after soliciting the recommendation of the Federal agencies involved, to grant rights-of-way across Federal lands and (*b*) authorize the applicant to proceed within 2 years from the date of filing if the Commission fails to act.

S. 2140 represents a revision by FPC Commissioners David S. Black and Charles R. Ross of S. 1472, a bill introduced by Senator Metcalf, of Montana. S. 1472 is identical to legislation originally introduced in Congress by Representative John Moss, of California. APPA has endorsed the objectives of S. 1472.

The major difference between S. 2140 and S. 1472 and the third bill presently before your committee, S. 2139, which is supported by FPC Commissioner Lawrence J. O'Connor, is that the two bills endorsed by APPA provide for regulation of interstate extra-high-voltage transmission lines while S. 2139 relies on recommendation.

S. 2139, AN ADVISORY APPROACH

S. 2139 proposes that the Federal Power Commission act in an advisory capacity with respect to utility proposals to construct interstate transmission facilities of 200 kilovolts and above. Utilities would be required to file information on their plans with the FPC, which, within 90 days of the filing date, would approve the plans as consistent with the "public interest" or announce that it is withholding approval and summarize its reasons.

Under S. 2139, if the FPC withholds its approval, the Commission would then meet with the applicant and other interested parties to explore possibilities for revision of the original proposal or the development of alternate plans. Within 12 months of the filing date, the Commission would either approve the original or alternate plan, or recommend modifications. Recommendations by other Federal agencies with responsibility for administration of affected public lands would be considered by the FPC, which would have exclusive jurisdiction.

If the applicant accepts the FPC-proposed modifications, the Commission would approve the proposal. If the applicant rejects the modifications, it could proceed with construction after a date specified by the Commission but not later than 2 years following the filing date. Federal powers of eminent domain would be available to utilities whose plans were approved by the FPC.

S. 2140 AND S. 1472, PROVIDE REGULATION

Both S. 2140 and S. 1472 would prohibit construction of interstate extra-high-voltage transmission lines in the absence of a certificate of public convenience and necessity issued by the FPC.

Under S. 2140, in order to obtain such a certificate, the Commission must find that a utility's plan is consistent with a comprehensive plan for the use and development of the power resources of the area for the purpose of making electric energy reliably available in ample amounts, on fair and reasonable terms, and includes therein to the extent financially feasible sufficient capacity to meet all needs within the affected area for transmission capacity, whether from public or private generation, including reasonable capacity for expansion to meet future loads. The Commission would have the authority to attach—

> such reasonable terms and conditions as the public interest and convenience may require.

Federal rights of eminent domain would attach to an approved plan.

S. 1472 would also require certification prior to construction and specifies that any approved transmission facility is subject to the condition that—

> any capacity of such facilities not required for the transmission of electric energy in the ordinary scope of such applicant's business shall be made available on a common carrier basis for the transmission of electric energy.

Certificates could be conditioned by the Commission. No right of Federal eminent domain is provided.

Other differences between S. 2140 and S. 1472 are (*a*) S. 1472 requires certificates for construction, operation, extension or maintenance of interstate EHV facilities; S. 2140 adds a requirement of certification of modifications; (*b*) S. 1472 considers EHV facilities to be those operated at 230 kilovolts or greater; S. 2140 defines such facilities to be those operated at 200 kilovolts or greater; (*c*) S. 1472 does not cover utilities presently exempted from the application of part II of the Federal Power Act; S. 2140 encompasses transmission facilities of local, State, and Federal agencies.

I wish to note that APPA's endorsement of S. 2140 is made with full recognition of the fact that the provisions of the bill would apply to local public power systems.

REASONS FOR APPA SUPPORT OF S. 2140

APPA supports enactment of S. 2140, with amendments, for the following reasons:

(1) There are approximately 2,000 local public power systems in the United States. Most of these systems are small utilities. Many

do not own major transmission, but might share transmission capacity with other utilities for mutual benefit. However, access to transmission is often denied these small systems for competitive reasons. As FPC Commissioner Charles R. Ross pointed out last year in connection with S. 2140:

> Very bluntly, as most people in the power business realize, it is no longer the parties who control generation that control the industry, it is the parties who control the transmission, the arteries of the industry, that control the destiny of the millions of ratepayers of this Nation. With the ever-threatening rivalry between public, private, and Federal transmission system, it should be obvious that there should be some instrumentality to referee the building of the proper interconnections and to insure against a needless duplication of facilities. Furthermore, there has to be some method under which the retail sellers, whether private, public, or Federal, can be guaranteed the right to use these facilities at a reasonable cost. Otherwise, these very same retail sellers will be at the absolute mercy of the owners of the transmission systems. If there is any justification at all for the maintenance of the status quo in the current lineup of public, private, and Federal systems, which I believe there is, then such a bill as this is necessary.

If a situation existed in which there was a general rule of voluntary cooperation between segments of the electric industry with respect to use of transmission, problems of monopolistic control would not arise. The fact is, however, that local public power systems have frequently found that access of transmission is achieved only (*a*) by exercise of sufficient bargaining leverage to compel cooperation, (*b*) by construction of their own separate facilities, or (*c*) by availability of excess capacity owned and operated by rural electric cooperatives, other local public agencies, or the Federal Government. S. 2140 would help solve this problem by insuring systematic consideration of the needs of all utilities prior to construction.

(2) There are a number of recent cases, decided or pending, that have been referred to the FPC, which has existing authority to deal with some situations involving wheeling, purchase of transmission capacity, and interconnection. However, whatever the scope of this authority, it does not deal fully with the problem.

A basic defect is the present inability of the FPC—or any other agency—to insure that transmission construction fits into a comprehensive plan which will best serve the needs of the entire affected area.

Under part I of the Federal Power Act, the Commission is instructed to license hydroelectric projects which "will be best adapted to a comprehensive plan for improving or developing a waterway." The FPC has conditioned such licenses to require that transmission lines associated with the project be fitted into an overall scheme. However, this is a piecemeal approach which has been little exercised.

The Departments of the Interior and Agriculture have issued regulations with respect to granting of rights-of-way across public lands. These regulations provide for review of transmission plans to determine whether or not they conflict with the Federal power marketing program, and permit the Federal Government to utilize surplus capacity in such lines are to increase the capacity at its own expense. Again, this approach—while it would remain in effect with respect to transmission lines from 33 kilovolts up to 200 kilovolts—applies only to particular parts of a limited area of the country, mainly the West.

By providing a mechanism for comprehensive planning, all electric utilities—regardless of ownership or size—would have an opportunity to insure that their transmission needs receive full consideration. And instead of the possibility of a number of lines built to satisfy the requirements of separate systems, a single facility might be created to serve a number of utilities on an equitable basis.

(3) A direct result of the comprehensive planning feature of S. 2140 would be a significant saving in cost. By use of larger lines, economies of scale could be achieved for the benefit of consumers.

Savings of size resulting from extra-high-voltage transmission facilities are due to the fact that as the voltage of the line increases, the load-carrying capacity of the line is multiplied. The power capability of a transmission line increases roughly as the square of the voltage. Losses in transmission are also reduced with increases in size. Because of these facts, it would require 13.5 lines of 230-kilovolt capacity to carry the same load as one 700-kilovolt line. The comparable capacity of lines of 345 kilovolt and of 500 kilovolt may be seen in tables 1 and 2.

The cost savings gained by constructing extra-high-voltage facilities may be illustrated by an area that requires the capacity of one 700-kilovolt transmission line. It could also be served by 13.5 lines of 230 kilovolts. The average cost throughout the country of right-of-way and clearing required by a 700-kilovolt line is estimated at $18,000 per mile. The average cost for right-of-way and clearing for a single 230-kilovolt line is estimated at approximately $10,000 per mile. It would cost $135,000 per mile of transmission line for right-of-way and clearing for the 13.5 lines of 230 kilovolts necessary to provide the same load-carrying capacity as a single 700-kilovolt line. Therefore, $117,000 per mile of transmission line may be saved by constructing one 700-kilovolt line rather than 13.5 lines of 230 kilovolts. Savings over 100 miles of line would be over $10 million.

This example is only in terms of savings that could be realized in the cost of right-of-way and clearing. Similar savings may be realized in the comparative costs for labor and materials. Figure 1 illustrates graphically the cost savings in right-of-way and clearing per mile of transmission line for the equivalent capacity of various voltages. Table 1 puts these figures into chart form.

(Table 1 and figure 1 follow:)

TABLE 1.—*Cost per mile of right-of-way and clearing to duplicate transmission capacity of one 700-kilovolt line*

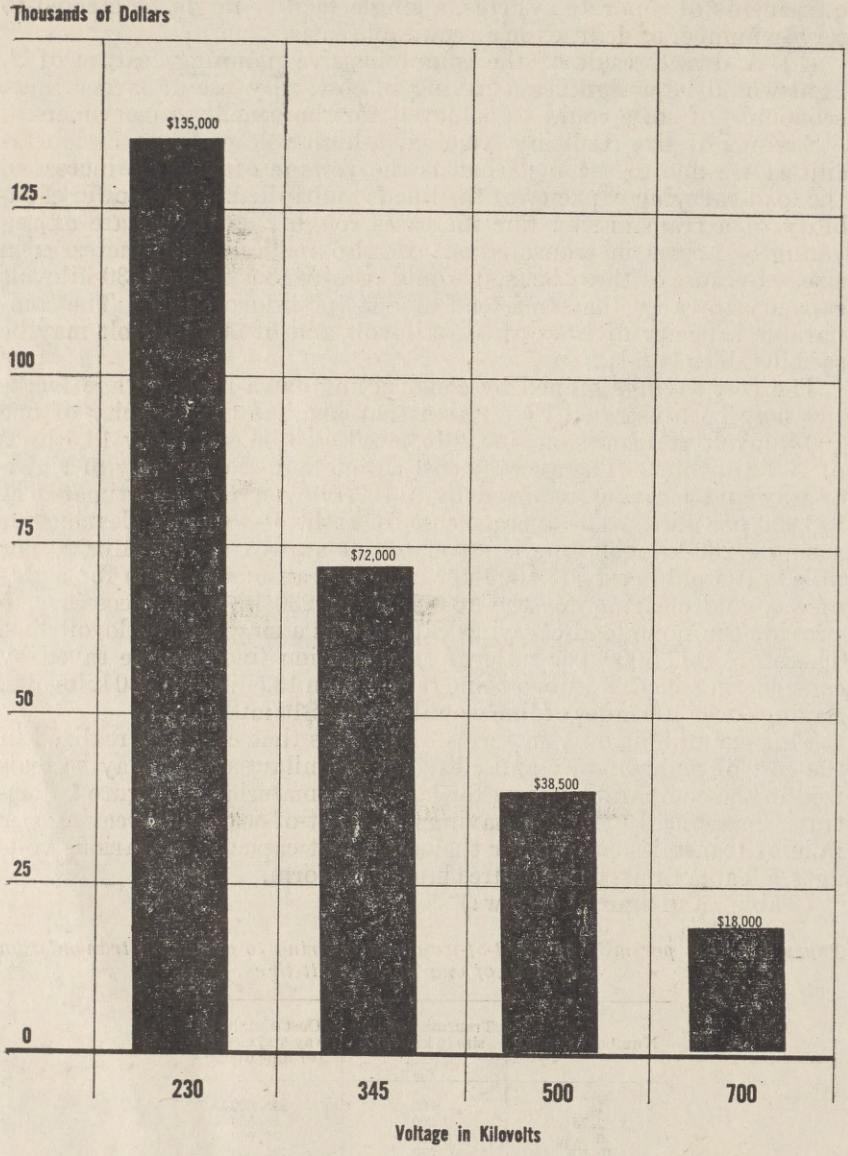
Number of lines [1]	Transmission line size in kilovolts	Cost of right-of-way and clearing per mile of line [2]
1	700	$18,000
2.75	500	38,500
6	345	72,000
13.5	230	135,000

[1] Statistics for the number of lines required for equivalent load-carrying capacity are from the "National Power Survey", pt. I, p. 151.

[2] Cost statistics for individual lines are from "Advisory Committee Rept. No. 10, National Power Survey." They are average rates throughout the country as of 1962 and are not meant to indicate the rates in a specific area. Clearing is considered to be 60 percent of right-of-way.

Figure 1

COST PER MILE OF RIGHT-OF-WAY AND CLEARING TO DUPLICATE TRANSMISSION CAPACITY OF ONE 700 KV LINE



(4) Another direct result of the comprehensive planning feature of S. 2140 is the potential savings in land use. Construction of transmission lines requires a certain amount of right-of-way. The more lines that need to be constructed, the more right-of-way that is required.

Savings in land use by the common use of a transmission line might be illustrated by the area required for the transmission capacity of one 700 kv. transmission line. As indicated earlier, such an area might be equally served, in terms of transmission capacity by 13.5 lines of 230 kv. One 700 kv. line would require about 27 acres of right-of-way per mile. To provide an equivalent transmission capacity with 230 kv. lines, approximately 205 acres of right-of-way would be required per mile of transmission line. This means that some 178 acres would be taken out of general use for each mile of transmission line if it were necessary to build the smaller lines rather than one large line.

The difference in area required by a transmission line extending the 233 miles from Washington, D.C., to New York City would be approximately 41,294.54 acres—more land than is contained in Acadia National Park of 31,692 acres. Similarly, a line from Portland, Oreg., to Los Angeles, Calif., would require 177,450 additional acres if 230 kv. lines were to be constructed rather than a 700 kv. line. This area exceeds that of Crater Lake National Park, which covers 160,290 acres. Table 2 and figure 2 illustrate the difference in acreage of right-of-way per mile needed for equivalent transmission capacity.

(Table 2 and fig. 2 follow:)

TABLE 2.—*Right-of-way land required (per mile of transmission line) to duplicate transmission capacity of one 700-kilovolt line*

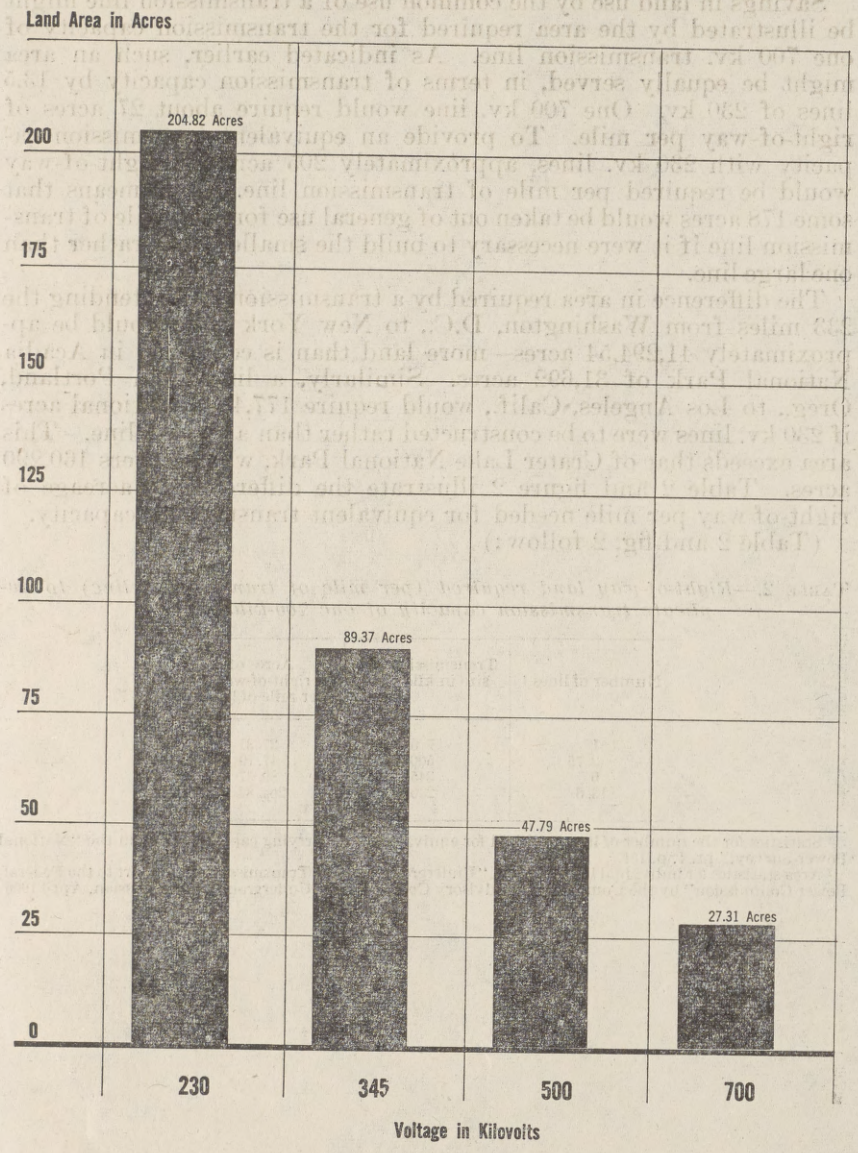
Number of lines [1]	Transmission line size in kilovolts	Acres of right-of-way per mile of line [2]
1	7 0	27. 31
2. 75	500	47. 79
6	345	89. 37
13. 5	230	204. 82

[1] Statistics for the number of lines required for equivalent load carrying capacity are from the "National Power Survey," pt. I, p. 151.

[2] Area statistics for individual lines are from "Underground Power Transmission: A Report to the Federal Power Commission" by the Commission's Advisory Committee on Underground Transmission, April 1966

Figure 2

RIGHT-OF-WAY LAND AREA REQUIRED (PER MILE OF TRANSMISSION LINE) TO DUPLICATE TRANSMISSION CAPACITY OF ONE 700 KV LINE



A further illustration of the difference of an area required for the construction of one higher voltage line rather than many lower voltage lines is provided in figures 3 and 4.

The first area considered is a portion of New York State which presently has six transmission lines, two of which are 345 kv. lines and four of which are 115 kv. lines. One 700 kv. line could be used in this area, eliminating the need for the six present lines plus providing the additional capacity of about two 345 kv. lines. The difference in area required by the present situation and the potential situation is illustrated in figure 3.

The second area is in Connecticut and presently has four 115 kv. lines. The same area could be served by one 230 kv. line. The difference in area required is illustrated in figure 4.

(For technical reasons the charts referred to cannot be reproduced. They are on file with the committee.)

Mr. HOBART. Five. Related to the advantages of land use are the advantages of a single overhead line rather than many such lines. Cost and engineering problems presently involved in the construction of underground transmission lines indicates the desirability of interim solutions that will advance the cause of natural beauty. In addition to various proposals for improving the appearance of overhead transmission facilities, reduction of the number of such lines required would be of direct assistance. S. 2140, through its comprehensive planning feature, could facilitate this reduction.

Six. The Northeast blackout of November 9, 1965, demonstrated conclusively the interstate character of today's electric industry. Within a period of 12 minutes electrical outages occurred in sequence from Niagara to New York. Eight States, 28 utilities, and 30 million Americans were affected. Proper planning would seem to be a necessity to insure that the stronger transmission and ties are created to help prevent major power failures. The National Power Survey reports that "today 97 percent of the industry's generating capacity is to a greater or lesser degree interconnected in five large networks." The largest existing group of interconnected utilities covers roughly the entire Eastern United States, as well as two Canadian Provinces. With this interstate—even international—interconnection of transmission systems, it is obviously impossible for individual States to fulfill the functions specified in S. 2140. The FPC is an appropriate repository for this responsibility.

APPA would suggest two amendments to S. 2140. The first would authorize the Commission, after soliciting the recommendations of Federal agencies involved, to grant right-of-way across Federal lands. Such a proviso is contained in S. 2139. Its inclusion in S. 2140 would insure that an applicant is not subject to dual regulation with regard to the same facility. The second suggested amendment would permit the applicant to proceed within 2 years from the date of filing if the Commission fails to act on the application. Again, this proposed procedure is similar to one contained in S. 2139. It would aid in guarding against lengthy delay in Commission consideration of transmission proposals.

It should also be pointed out that S. 2140 does not expressly recognize the right of a system in the affected area to contract for surplus

capacity in a certified transmission line, although this is an inherent element of the comprehensive plan test. S. 1472, for instance, provides that—

> Any capacity of such facilities not required for the transmission of electric energy in the ordinary scope of such applicant's business shall be made available on a common carrier basis for the transmission of electric energy.

Such a standard with respect to "excess capacity" is also present in the right-of-way regulations promulgated by the Departments of the Interior and Agriculture. It would appear desirable to indicate explicitly that surplus capacity shall be available as a matter of right to all users and suppliers of electricity in the affected area.

Senator LAUSCHE. Chairman White of the Federal Power Commission made the statement:

> State regulatory statutes seem oriented toward assuring the stability of the private-owned utility enterprise by insuring that they do not construct wasteful or unnecessary facilities or suffer harm from invasions of service areas. The State statutes do not appear to focus sharply on the technical problems of interconnection or utility aesthetics.

What is your view of this thought expressed by Mr. White?

Mr. HOBART. Mr. White's comments would square with our experience, Senator. My recollection of Chairman White's testimony is that he indicated that there are some 37 States that have some form of certification authority with respect to transmission. However, the extent of that authority differs from State to State. In some States, for instance—as I recall his figure it was 13—the State commission does not have the authority to deal with transmission extensions within an existing service area; in other words, the utility is free to go ahead and construct transmission facilities without certification if the line is to be located within a previously prescribed service area.

The problem which our members experienced is basically one of lack of cooperation by private power companies owning and operating transmission facilities. For instance, in the State of North Dakota a city held an election and decided to set up a municipal electric distribution system. The city had been served by a private power company. When the city made the decision to establish a municipal system, it was determined that it was cheapest to purchase power at wholesale from the Bureau of Reclamation. However, it was necessary to transmit the power some distance, and the city had no transmission lines of its own.

The city requested the company to wheel power, and the company refused to do so. The city was then placed in the impossible situation of having decided to establish a municipal system to lower its power costs, but being unable to justify construction of transmission facilities necessary to reach the Bureau directly while simultaneously confronted with a decision on the part of the utility next door that it would not serve. This is one example of the transmission problems faced by small local public power systems. There are others.

Senator LAUSCHE. What seems to me to be the pertinent part of the statement is:

> The State statutes do not appear to focus sharply on the technical problems of interconnection or utility esthetics.

That is, one, the utility, and other the esthetics and the land use phase of it.

Mr. HOBART. With respect to the technical problems, the State commissions vary a great deal with respect to the attention they devote to particular aspects of the problem. I could not generalize on that part of it.

Senator LAUSCHE. All right. I have no more questions.

Thank you very much.

With us this morning are Mr. W. J. Clapp, president of the Florida Power Corp., and president of the Edison Electric Institute, and Mr. P. H. Hartung, vice president, Public Service Electric & Gas Co., of Newark, N.J.

I understand that you desire to make your presentation jointly, so both of you may step forward.

STATEMENT OF W. J. CLAPP, PRESIDENT, FLORIDA POWER CORP., AND PRESIDENT, EDISON ELECTRIC INSTITUTE; ACCOMPANIED BY JOHN J. KEARNEY, EDISON ELECTRIC INSTITUTE; AND P. H. HARTUNG, VICE PRESIDENT, PUBLIC SERVICE ELECTRIC & GAS CO., NEWARK, N.J.; ACCOMPANIED BY J. HARRY MULHERN, GENERAL SOLICITOR, PUBLIC SERVICE ELECTRIC & GAS CO.

Senator LAUSCHE. Mr. Clapp, I understand you will present your paper first; is that correct?

Mr. CLAPP. Yes, sir. I am accompanied here at the stand by an engineer staff member of the Edison Electric Institute, Mr. John Kearney. We thank you for this opportunity of appearing before the committee and for the privilege of expressing our views in connection with this proposed legislation.

My name is W. J. Clapp, and I am president of the Florida Power Corp. and the current president of the Edison Electric Institute, the principal trade association of the investor-owned electric utility companies which serve approximately 80 percent of the electric utility customers in the Nation. It is on behalf of the Edison Electric Institute that I am appearing before this committee today.

Edison Electric Institute opposes the enactment of S. 1472, S. 2139, or S. 2140 for the reason that the objectives of the bills are already being accomplished and can better be furthered through evolutionary developments underway, which are fully subject to existing jurisdiction of the Federal Power Commission. Furthermore, such legislation could present a serious conflict with State and local regulations.

In the interest of further improving system planning and operation and providing more reliable and economical service to the American public, the industry has cooperated with Federal Power Commission through various advisory committees and will continue to do so.

For example, an executive advisory committee consisting of electric utility executives was formed in 1962 at the request of the former Chairman of the Federal Power Commission, Joseph C. Swidler, to assist the Commission with the national power survey.

This committee was not only of major assistance in the conduct of the national power survey, but also in the Commission's efforts to urge the electric utility industry along the guidelines set out in the survey.

To assist the Commission in a projected program of updating the survey by 1969, the Commission reestablished the executive advisory committee in the fall of 1965 with participation from every segement of the Nation's electric utility industry.

This committee is currently comprised of: Lelan F. Sillin, Jr., president, Central Hudson Gas & Electric Corp., chairman; Charles F. Luce, Administrator, Bonneville Power Administration, vice chairman; Thomas G. Ayers, president, Commonwealth Edison Co.; Jack K. Busby, president, Pennsylvania Power & Light Co.; D. S. Kennedy, chairman of the board and president, Oklahoma Gas & Electric Co.; A. H. McDowell, president, Virginia Electric & Power Co.; R. J. McMullin, general manager, Salt River Project Agricultural Improvement and Power District; Harry Oswald, general manager, Arkansas Electric Cooperative Corp.; S. L. Sibley, president, Pacific Gas & Electric Co.; and Harry G. Wiles, member Kansas State Corporation Commission.

Following the northeast power interruption in November 1965, a panel of experts on power system planning and operation was assembled to assist the Commission in the preparation of its report to the President on this power failure.

Early this year, six regional advisory committees, embracing all segments of the industry, were established to assist the Commission and the executive advisory committee in encouraging electric utility systems to pursue courses of action consistent with the broad goals of the national power survey, in reporting progress being made in attaining those goals, and unpdating the survey's guidelines.

Senator LAUSCHE. Will you describe the national power survey? By whom it was made and what general subjects it covers, please:

Mr. CLAPP. Well, the national power survey was requested by the Federal Power Commission and with the cooperation of the gentlemen who I named previously.

Senator LAUSCHE. They were a——

Mr. CLAPP. Advisory committee to the Federal Power Commission.

Senator LAUSCHE. Who chose them? The Federal Power Commission?

Mr. CLAPP. Yes. They invited these people to participate, which includes representatives of the investor-owned industry, as well as engineers and other people from the other segments of our industry. The Federal power group as well as representatives of the cooperative and other public power agencies.

Senator LAUSCHE. The survey consists of two volumes?

Mr. CLAPP. Yes, I believe so.

Senator LAUSCHE. And they were filed in 1964, October 1964, they were completed?

Mr. CLAPP. Yes. It is now in the process of being updated for the estimates through 1969.

Senator LAUCHE. Do they substantially cover the whole gamut of problems that have been discussed on this subject, of land use and economic installations and the right of smaller institutions to use the general powerlines?

Mr. CLAPP. There was a very broad study of the whole subject, yes, sir; of power supply, transmission, all of it.

Senator LAUSCHE. All right. You may proceed.

Mr. CLAPP. I think I made a mistake in answering your question. These gentlemen whose names I read to you are the present executive advisory committee. There were others——

Senator LAUSCHE. They don't necessarily duplicate the ones that were members at the time the survey was made?

Mr. CLAPP. That is right. I wanted to correct that, please.

Senator LAUSCHE. All right.

Mr. CLAPP. The 1964 executive advisory committee consisted of Chairman Philip Sporn, American Electric Power Co.; Vice Chairman G. O. Wessenauer, Tennessee Valley Authority; William Webster, New England Electric System; Harold Quinton, Southern California Edison Co.; Vincent M. DeMelto, Cleveland Department of Light & Power; J. Harris Ward, Commonwealth Edison Co.; E. W. Morehouse, Princeton, N.J.; Eugene S. Loughlin, Public Utilities Commission of Connecticut; John Hyde, Southwestern Federated Power Cooperative; J. W. McAfee, Union Electric Co.; and Paul J. Raver, superintendent, Seattle City Light (deceased).

In February 1966, the Federal Power Commission appointed an advisory committee on reliability of electric bulk power supply to review and investigate the problems involved in assuring a reliable supply of bulk power on an area and regional basis.

An advisory committee on underground transmission was established by Federal Power Commission in 1965, for the purpose of assisting the Commission in preparing a report on the state of the art of underground transmission both by alternating and direct current. This committee was composed of experts in this field from the electric utility industry, cable manufacturers, and the American Society of Planning Officials.

With this sort of voluntary cooperation we submit that no additional legislation is neeeded to accomplish the objectives of the three bills before this committee. In fact, provisions of these bills would distort the optimization of system design and would create more problems than they would solve.

Senator LAUSCHE. You stated this committee was composed of experts in this field from the electric utility industry, cable manufacturers, and the American Society of Planning Officials.

The American Society of Planning Officials is an organization made up of members that are supposed to envision the future and develop plans that will be most compatible with the rendition of services at the present and the preservation for the future of esthetic beauty and natural resources. Is that substantially correct?

Mr. CLAPP. That is my understanding; yes, sir.

Senator LAUSCHE. All right. Proceed.

Mr. CLAPP. S. 2139, which was recommended by former Chairman Swidler and Commissioner O'Connor, has been said to embrace this voluntary approach. Indeed, in submitting the draft bill, Mr. Swidler pointed out that it "confers upon the Commission a responsibility for advice and guidance but leaves final decision in the hands of the constructing agencies, public and private."

However, such final decision, if it differs from that of FPC, can be made only after a lapse of 2 years. Such a delay could seriously handicap system planning and increase costs materially.

For example, plans for new generating units must be made on the premise that associated lines can be built where and when needed. A possible delay of 2 years in getting transmission lines under way could result in generating capacity being installed 18 to 24 months before it is needed in order to assure a reliable power supply with adequate reserve.

A premature disclosure of plans to avoid delay would greatly hamper the orderly and economical securing of rights-of-way.

The inherent delays that would result from the proposed legislation and the effect of such delays on cost and the carrying out of service responsibilities can be highly detrimental to the utilities and their customers.

S. 1472 specifically provides as a condition precedent to the issuance of a certificate of convenience and necessity that any capacity not required for the transmission of electric energy by the applicant shall be made available on a common carrier basis for the transmission of other electric energy.

To require as a condition precedent to a certificate that "surplus" capacity in a proposed line becomes a common carrier would in effect reduce reliability of service.

In the first place, it raises the question as to who would determine the amount of "surplus" capacity in a particular line and how. As a general rule, transmission lines are not designated to include "surplus" capacity, as such. Capacity in excess of the load provides for a reserve in the event of an emergency.

Furthermore, transmission lines are not designed as such, but as a component of an entire system for which reserve capacity must be provided.

To have this capacity in use on a common carrier basis would encroach on this reserve capacity, and, in the event of a fault on one of the components of the system, it could create a very dangerous situation which could jeopardize the stability of the entire system and produce a cascading type of interruption.

Senator LAUSCHE. What is your interpretation of the language which would require a power company to make its excess capacity available as a carrier to some other user? What if in the course of time the excess no longer existed? Would the right of the user continue as a priority over the right of the power company?

Mr. CLAPP. Well, that is one of the several problems in connection with the matter of the common carrier principle, the difficulty in negotiating contracts, it would determine where the precedent would lie.

It is of a great deal of concern to us to think about having to contract out surplus capacity on the common carrier basis.

Senator LAUSCHE. Can you add anything to that?

Mr. KEARNEY. No, sir.

Senator LAUSCHE. Proceed.

Mr. CLAPP. We wish to emphasize that a single transmission line is but a part of the entire system, and modification of the planning of the line or delay in permitting it to be installed could seriously affect the overall plan which component utility planners and operators have developed over a period of years.

The common carrier provision raises the very difficult problem of how all systems, regardless of size or type of ownership, could have access to the economies of scale.

Many of the aspects of this problem are described in chapter 16 of the National Power Survey. In fact, municipal systems and REA-financed cooperatives now have access to these economies through their wholesale power contracts with the companies in the same manner as any other customer.

S. 1472 and S. 2140 contain an abandonment provision, paralleling section 7(b) of the Natural Gas Act. As interpreted by decisions under the Natural Gas Act, this provision would require continued wholesale service even after the expiration of a contract, whether termination was by lapse of time or by the exercise of an option on the part of the seller.

The same situation does not prevail in the electric utility industry as in the natural gas industry. In most cases a natural gas pipeline represents a gas distributor's only source of supply from the natural gas fields, whereas an electric utility is not restricted by geography from constructing a generating plant as its source of supply.

Moreover, the economics of purchasing power is based on this very alternative—the relative cost of self-generation.

The right of a seller to terminate an onerous wholesale contract after a suitable period of notice is an essential part of the basic contract bargain, and in many cases may be the only route by which a discriminatory rate situation can be rectified.

The National Power Survey outlines in full detail the potential benefits to be obtained from EHV interconnections and the formation of broader power pools. It by no means, however, proves the case for regulatory control.

Major steps already announced and in progress across the country make it clear that the National Power Survey has served its immediate purpose of further stimulating growth of interconnections and coordination.

It is our understanding that the principal objective of these bills is to foster strong interconnections for the benefit of the electric power consumer. In fact, the preamble to S. 2139 states the purpose of the bill as follows: "to encourage and facilitate the construction of extra-high-voltage electric transmission lines in the public interest."

We do not believe the legislative action is necessary to encourage the fulfillment of the purpose. Interconnections and coordination in the electric utility industry are nothing new. In fact, today almost all of the major electric power systems in this country belong to one of several large regional or area coordinating groups.

Senator LAUSCHE. We now have pending a bill before this committee that contemplates removing some of the supposed obstacles that exist against coordinated effort by reason of the monopoly and anti-trust laws.

You say:

In fact, today almost all of the major electric power systems in this country belong to one of several large regional or area coordinating groups.

That is, you are coordinating your efforts?

Mr. CLAPP. Yes, sir.

Senator LAUSCHE. And you believe in the coordination of efforts that an economy is produced for the benefit of the consumer?

Mr. CLAPP. That is right.

Senator LAUSCHE. And that you therefore do not believe that legislative action is necessary to encourage the fulfillment of this purpose of coordination?

Mr. CLAPP. We do not feel legislation——

Senator LAUSCHE. I am not trying to put you on a hook. All right. That is, you feel you have coordinated?

Mr. CLAPP. Yes.

Senator LAUSCHE. And for the benefit of the consumer?

Mr. CLAPP. Yes, sir.

Senator LAUSCHE. But still there is present among many power companies the fear that they might be subjected to prosecution or antitrust suits, and they have therefore asked for the adoption of a law that would definitely legalize the coordination, if there is any question about its legality in existence?

Mr. CLAPP. I think the bill you are referring to is Senator Magnuson's bill.

Senator LAUSCHE. That is correct.

Mr. CLAPP. And there are certain—a few power companies in the country that did advocate that legislation. There were others, I would say the majority, that did not feel that was necessary. But the Edison Electric Institute took no stand on that because there was not unanimity among the companies on it.

Senator LAUSCHE. I see. You may proceed.

Mr. CLAPP. Within these groups electric utility systems coordinate the planning and operation of their respective systems so as to provide reliable and economical electric service. Coordination also is carried out between these regional groups.

These groups, generally through committees, coordinate the installation of generating units and related transmission, the exchange of energy for reasons of economy or emergency and coordinate maintenance of equipment so as to provide more reliable service.

A few examples may help to illustrate how electric utility systems are constructing extra-high-voltage lines in the public interest. For instance, in the Middle Atlantic States, a coordinated 500-kilovolt grid is being developed to serve the present and future needs of the electric power consumers in this area. Portions of this grid already are in operation. It will tie together large and efficient generating units.

This same voltage is being used for interconnections between the Tennessee Valley Authority (TVA) and 11 companies in the Southwest known as the South Central Electric Companies (SCEC). TVA and SCEC are using these EHV interconnections for the seasonal exchange of capacity. Ultimately this exchange will reach about 2 million kilowatts.

The 500-kilovolt system in the Middle Atlantic States will be tied into the existing 345-kilovolt grid in New York State which in turn is tied into the 345-kilovolt grid that is being built in New England.

American Electric Power Co. recently announced plans for an overlay of 765 kilovolts in its service area to provide for the future needs of its customers.

In the Far West the joint efforts of investor-owned and non-investor-owned systems have resulted in the establishment of a plan to tie together the Pacific Northwest-Southwest with EHV transmission including the first use of direct current transmission in this country.

These various EHV transmission interconnections are not limited to investor-owned systems but involve various segments of the electric utility industry as illustrated by the participation of TVA in a diversity exchange arrangement and the involvement of Federal power agencies and a municipal system in the Pacific coast intertie.

The Mid-Continent Area Power Planners (MAPP) is another example of how the various segments of the industry coordinate the construction of EHV lines so as to provide reliable service to their customers.

MAPP is an organization that includes 14 investor-owned electric utility companies, 6 generation and transmission rural electric cooperatives with a membership of 70 distribution cooperatives, the Omaha Public power district, the Manitoba Hydroelectric Board of Canada, and 17 municipal electric utilities having their own generation.

Nearly 200 other municipal systems are connected to MAPP member systems, thus deriving benefits from the MAPP program.

MAPP systems operate in 10 Midwestern States and the Province of Manitoba, Canada. MAPP member utilities and several coordinating adjacent power suppliers will build a 5,400-mile network of 230- and 345-kilovolt lines by 1980. This network will add significantly to the reliability and economy of the power supply in the region.

Furthermore, Edison Electric Institute sponsors and supports a substantial amount of R. & D. related to EHV transmission, including research on extra-high-voltage cable, d.c. transmission, cable insulation, a.c./d.c. system operation, esthetic designs, and extra-high-voltage a.c. and d.c. underground transmission.

Many of these projects are being carried on through the Electric Research Council which embraces all segments of the electric power industry.

In this country we have the greatest power system in the world. We lead the world in technology, interconnections, reliability, and in service to our customers. We believe we can do even better, and that is what we plan to do.

America now has almost as much electric generating capacity as the next five nations in the world combined.

America has the largest network of transmission lines in the world—over four times the miles than that of the Soviet Union, which has almost three times the land area.

Continuing advances are being made every day, including advances in the areas of high-voltage transmission and pooling. The electric companies have made definite plans through 1970 and are now planning for the 1980's and beyond.

Expenditures on new construction will be on the order of $4.9 billion in 1966. It is estimated that these expenditures will reach $6.4 billion in 1970 and $12 billion in 1980. Included in these expenditures are funds for many miles of EHV lines.

Realizing the growing importance of coordination among electric utility systems, EEI has formed a division on power systems coordina-

tion, which includes an executive committee; an electric power survey committee (a long-time standing committee of the institute), which keeps close watch on load forecasts across the country and the capacity scheduled to meet these loads, and reports on new transmission facilities planned; a committee on interconnection agreements, which provides a means of exchanging information on coordinating arrangements; a committee on coordinated area planning, which exchanges information on the planning aspects of pooling and coordinating procedures and criteria; and, a committee on coordinated area operations, which exchanges information on the operating technical aspects of pooling and coordinating procedures and criteria.

These committees work closely with the FPC advisory committees. In fact, the same people serve on some of the advisory committees at times.

The record of accomplishments made by the electric utility industry in this country offers no evidence to indicate a need for the proposed legislation. There has been no showing of any abuses which the legislation would eliminate.

We respectfully submit, therefore, that a more orderly and economical development of the electric utility industry can be furthered through the continued reliance on voluntary cooperation among all segments of the industry than can be accomplished by additional legislation.

Furthermore, we seriously question whether it is the proper function of a Federal regulatory agency to take over operational decisions to the extent envisaged in these proposals, and to so positively interfere with management judgment in a technological area, taking over decisions which should be made by those having the responsibility of serving their customers.

Senator LAUSCHE. Mr. Clapp, in the paper of Mr. Hobart there is a discussion of what it would cost to install one 700-kilovolt line, $18,000 for the clearing of the right-of-way per mile. It then goes on to show what it would cost to clear 13.5 lines—do you see the graph?

Mr. CLAPP. Yes, sir.

Senator LAUSCHE. At a cost of $135,000. He therefore states that through lack of cooperation, unneeded costs has been expended in building too many lines, when through coordination less lines could be built at a less cost and provide the same kilovolts. May I hear your views on his argument?

Mr. CLAPP. As far as what has happened, I think it has grown up over a period of a long time, and the load conditions were not there to justify the higher voltages at the time lots of these lines were built originally. And as the load increases, additional facilities had to be installed and that would be the case whether it be on a coordinated basis or without coordination, as far as that is concerned.

These additional lines were brought about by growth. The increase and improvement in technology and the use of high voltages, extra high voltage and all have only come about in more recent years.

Certainly I am sure that all of these coordinating groups that are working toward the future are going to utilize as much high voltage as possible, extra high voltage as possible, in order to get the economies such as this gentleman expressed here.

Senator LAUSCHE. Does the survey deal with this subject of coordinated activities so as to reduce the cost and reduce the acreage of land needed?

Mr. CLAPP. The survey deals with that aspect, I am sure, to some extent. But the prevailing thing I think would be the fact that it would work out from an economic standpoint to better advantage to use the extra high voltage. But a great deal of work is being done by these coordinating groups, not only within our segment of the industry, but jointly with other segments of the electric utility industry.

We are cooperating in research from the esthetic angle.

Senator LAUSCHE. Mr. Hobart raised several issues pointing toward the achievement of greater economy, the preservation of land, the maintenance of landscape beauty, if the coordination was supervised by the Federal Power Commission rather than determined by the power companies.

May I hear your comment on that argument?

Mr. CLAPP. We dealt with that in our statement in a general way, where we said that a voluntary program in our mind is preferable to being ordered to do something because of the many technological problems that we have to get into, and this involves a great deal of complex study.

For years our groups have been coordinating on the original concept of the need of the area as a whole for transmission lines. Jointly we go to what we call a board study, General Electric, Westinghouse, various universities over the country have computers of the proper type for use in studying load conditions of the future and in determining the size of the lines to be built from the source of power to these various loads as this increases year by year over the next 5 or 10 years, whatever period the study covers.

All of that is so involved and so complex and takes such a long time that it is felt that jointly it can be accomplished better, on a coordinated cooperative basis, that we are now working on with Federal Power Commission and all other interested parties.

Senator LAUSCHE. You state that America has the largest network of transmission lines in the world, over four times the miles of the Soviet Union, which has almost three times the land area. I don't suppose you are able to give an answer to this question, but if you have many powerlines with low kilovoltage, the mileage, in length, is greatly enhanced than if you have high kilovoltage on a particular line. Is that a fact?

Mr. CLAPP. Well, in planning for the future, we are taking that into consideration; yes, sir. With one of the exchange groups of the State Department, I had the privilege of visiting Russia on the matter of electric power supply in their area compared with ours. And I do know that these figures are in order and in line.

They have done a great deal of high-voltage work, extra-high-voltage transmission work, but their distances are so great over there that they have to go to higher voltages, and they are trying to pick up as much of the hydro which is primarily a great distance away from industrial loads, so they do have extra high voltage, have done considerable work on it. And we have access now to a great deal of the information that they have collected over there.

Senator LAUSCHE. When I practiced law a number of years ago and I tried many condemnation cases for the Cleveland Metropolitan Park Board and one of the experiences was that the moment it was disclosed where the metropolitan park board intended to acquire land, the price demanded jumped.

I want you to elaborate on what you said about a premature disclosure of plans would greatly hamper the orderly and economical securing of rights-of-way.

Mr. CLAPP. Well, I think our condition would paralled what was experienced by the metropolitan board which you speak of, Senator. If they see us coming, why, the price goes up automatically. And we do have to try and work these plans out as far ahead as possible and insure the procuring of the land on a basis that we do not come out with a price that is out of order, because after all, it would reflect in our rate base if the prices were increased.

Senator LAUSCHE. Is it your judgment that under these bills that we have under consideration that disclosure would happen and that the line that was to be adopted would become known and the price would rise?

Mr. CLAPP. Yes, sir.

Senator LAUSCHE. Do existing Federal departmental right-of-way regulations on lines crossing federally managed lands offer any obstacles which you feel need a legislative solution?

Mr. CLAPP. Without access to any of the information as to the official position on the part of Edison Electric Institute on that particular point I would say personally, yes, the legislation where we would have lines across Federal property puts us in a position of becoming common carriers between the terminal points on either side of the Federal land.

Senator LAUSCHE. That is, the question is do you feel we need legislative action to solve problems in getting permission to cross federally managed lands with powerlines?

Mr. CLAPP. Well, as far as getting the permission of the agencies, generally I would say we were able to work it out. But it is this thing that hangs over our head of making any such line that does cross it, putting us in the position of being a common carrier.

Senator LAUSCHE. All right. Some States will not allow a foreign corporation to use condemnation for rights-of-way. Some States forbid condemnation across railroad rights-of-way. Do you feel it would be useful to have Federal eminent domain procedures?

Mr. CLAPP. No, sir.

Senator LAUSCHE. You do not think it is necessary?

Mr. CLAPP. No.

Senator LAUSCHE. Now, the title of your institution is Edison Electric Institute. Will you describe its membership? Is this an institute that does research work and is made up of power companies?

Mr. CLAPP. It is made up of investor-owned power companies. About 180-some-odd power companies. And it represents approximately 97 or 98 percent of the total number of customers served by investor-owned companies over the country.

Senator LAUSCHE. What is the function that you perform, that is Edison Electric Institute?

Mr. CLAPP. We have some 84 committees that are formed together into the various aspects of the operation and objectives of our business, research, development, operation procedures, all are studied constantly by some 2,400 people that are members of these 80-some-odd committees. It is our purpose, our objective is to render as reliable service as possible and keep the price down as low as possible to the consumer.

Senator LAUSCHE. All right. Thank you very much. Now I have here a paper from Hr. Hartung.

Mr. HARTUNG. My name is Philip H. Hartung. I am the vice president in charge of power pooling of Public Service Electric & Gas Co. I am currently the Public Service Electric & Gas Co. representative on the management committee of the Pennsylvania-New Jersey-Maryland Interconnection (PJM). It is on behalf of the management committee that I am appearing before this committee today.

The Pennsylvania-New Jersey-Maryland Interconnection is a formal power pool including in its fully coordinated operation and coordinated planning a total of 12 operating companies. The power pool is established by a written agreement which sets forth the respective rights and obligations of the participants and appoints the necessary committees and central operating office. Through an extensive and active organization, the operation and planning of the power pool provides for more dependable, economical, and efficient service to the public.

Nine of the systems are signatories to this agreement. Three systems are included in the power pool through separate agreements with two of the signatories to the main agreement. The 12 operating systems included in the fully coordinated operation and coordinated planning of PJM are the following: Public Service Electric & Gas Co.; Philadelphia Electric Co. Group, composed of the Philadelphia Electric Co., Atlantic City Electric Co., and Delmarva Power & Light Co.; Pennsylvania Power & Light Co. Group, composed of the Pennsylvania Power & Light Co., Luzerne Electric Division, UGI Co.; Baltimore Gas & Electric Co.; General Public Utilities System, which is composed of four operating groups, Jersey Central Power & Light Co., Metropolitan Edison Co., New Jersey Power & Light Co., Pennsylvania Electric Co., and the Potomac Electric Power Co.

Perhaps a brief review of the history of the development of PJM would be of interest. During the mid-1920's, three systems operating in portions of Pennsylvania and New Jersey undertook studies to determine the justification and need for high-capacity interconnecting transmission lines to realize certain of the benefits of power pooling. The outcome of these studies was the formation of the Pennsylvania-New Jersey interconnection, the predecessor of PJM. By agreement dated September 16, 1927, Public Service Electric & Gas Co., Philadelphia Electric Co., and Pennsylvania Power & Light Co. initiated the construction of 230-kilovolt interconnection lines and also the basic operating practices establishing the "one system" concept. Under this concept, the system of a power pool are operated as though they were one system, without regard for territorial division or ownership. The greatest benefits are thereby obtained, and these benefits are then shared among those systems creating the benefits and by the customers of the respective systems.

Senator LAUSCHE. By what you have thus far said, is the inference justified that you are now attempting through coordinated action to achieve the objectives that have been spoken about here earlier by some of the witnesses?

Mr. HARTUNG. Yes, sir; that is the objective and that is the point we wish to make, that the objectives as detailed in the bill are actually being done voluntarily.

Senator LAUSCHE. Mr. Hobart's testimony was to the effect that Federal supervision is required to achieve what you have just been stating has been done through this pool in which you are involved?

Mr. HARTUNG. Yes, sir.

Senator LAUSCHE. All right. Proceed.

Mr. HARTUNG. As the systems grew, and as interconnection lines were established with adjacent companies, their operations became part of the operation of the Pennsylvania-New Jersey interconnection. Recognizing the improved technology of operation and the desirable inclusion of more systems, studies were initiated in 1955 to expand the original power pool. By agreement dated September 26, 1956, the PJM interconnection replaced the former Pennsylvania-New Jersey interconnection. In addition to the original three systems, Baltimore Gas & Electric Co. and the four operating subsidiaries of the General Public Utilities Corp.; that is, Pennsylvania Electric Co., Metropolitan Edison Co., New Jersey Power & Light Co., and Jersey Central Power & Light Co. entered into that agreement. By a supplemental agreement dated January 28, 1965, Potomac Electric Power Co. became the ninth signatory to the PJM agreement.

This power pool presently serves more than 20 million people, or about 10 percent of the Nation, in the States of New Jersey, Pennsylvania, Delaware, Maryland, and Virginia, as well as here in the District of Columbia. Geographically, the PJM service territory resembles a huge triangle, stretching from Erie, Pa., 350 miles eastward to the Hudson River, then 350 miles south to Cape Charles on the Delmarva Peninsula, and finally back to Erie, Pa. This area encompasses more than 48,000 square miles and contains some of the most highly industrialized and commercially vital sections in the United States.

The installed generating capacity of the PJM member companies now totals 18,907 megawatts. The alltime peakload to date of 17,582 megawatts was experienced on July 13 of this year. By 1972 the PJM installed capacity is expected to reach 31,000 megawatts with an annual peakload of over 26,000 megawatts.

PJM is operated under the one-system concept, as a single control area with minute-to-minute economic dispatch of generation and with free-flowing ties. A requirement for such operation is a strong transmission system which presents a minimum of limitations to the unrestricted free flow of power.

From the power pool's inception, its backbone has been the coordinated development of a strong 230-kilovolt bulk-power transmission system interconnecting the facilities of the member companies. From its modest beginning of a 290-mile ring in the early 1930's, it has grown to more than 2,000 circuit miles. Present plans and commitments call for the installation of an additional 800 miles in the near future.

The transmission system is designed for full utilization. Any apparent excess capacity existing from time to time is either an operating

reserve necessary for the successful operation of the system, or added capacity installed to meet expected increased demand in the near future.

Because of the ever-increasing demand for economical and reliable power, certain member companies of PJM have embarked on the installation of three major mine-mouth generating stations of 4,880 megawatts total capacity, 4,240 megawatts of which will be owned utilmately by PJM companies. The Keystone station will be owned by seven member companies as tenants in common.

Senator LAUSCHE. Where will the Keystone station be?

Mr. HARTUNG. The Keystone station will be located about 10 miles west of Indiana, Pa., that is about 40 miles a little bit north and east of Pittsburgh.

Senator LAUSCHE. You say that it is a major mine-mouth generating station. Will you define that?

Mr. HARTUNG. A mine-mouth station is one that is located at the mouth of a mine or the mouth of a mining complex.

Senator LAUSCHE. What type of mining is done at the Keystone station?

Mr. HARTUNG. This will all be deep mining at the mine mouth. I think that the fuel requirements of the station will be met by the importation of other coal and that may be a combination of deep or strip mining.

Senator LAUSCHE. Three major mine-mouth generating stations—is there any one of the three that is going to depend mainly on strip mining coal?

Mr. HARTUNG. No. The other two will be supplied completely by deep mines. And the coal that will be supplied to Keystone from strip mining will be a minimum. I doubt it will amount to 5 percent.

Senator LAUSCHE. I hope that is true with your pool. It has not been true with the pool in Ohio at Kyger Creek on the Ohio River. The land has been butchered by them. Some effort has been made but it was not adequate to restore the coverage of the land. You may proceed.

Mr. HARTUNG. The first unit of 900-megawatt capacity is expected to be in service in May of 1967 with the second a year later. The Conemaugh Station will be owned by nine member companies as tenants in common and will consist of two units of the same capacity as Keystone with the first unit in 1970 and the second in 1971. The Homer City Station will be owned by the Pennsylvania Electric Co., and the New York State Electric & Gas Co., and will consist of two units of 640-megawatt capacity each; the first to be installed in 1969 and the second in 1970.

To transmit this power, an EHV transmission system fully coordinated with the existing transmission, is now under construction. This system will also tie into EHV systems of adjoining power pools on the northeast, the west, and the south.

Senator LAUSCHE. Was your PJM pool connected with the New England powerlines? Were you in any way tied in with the supply of electric in the area where the breakdown occurred?

Mr. HARTUNG. Yes. With New York State. PJM had seven ties. There was no direct tie between PJM and New England. It must

go through the Central Hudson System. There are ties between PJM and New York State.

Senator LAUSCHE. All right. You may proceed.

Mr. HARTUNG. When completed, approximately 900 miles of 500-kilovolt circuits and 130 miles of 345-kilovolt circuits will be added to the transmission system of the PJM companies. This EHV transmission system will materially strengthen the intra-company ties and will provide strong interpool ties with neighboring systems.

In order to optimize the benefits from power pooling and interconnection, PJM has, over the years, established and maintained interpool ties at 138 and 230 kilovolts with adjacent power pools and systems. Today, PJM has interconnection ties with the Allegheny Power System, Cleveland Electric Illuminating Co., Virginia Electric & Power Co., and the New York State power systems. Interpool planning is coordinated through advisory planning committees and joint study groups comprised of representatives of the several systems involved. The network transfer capability or the amount of power which can be interchanged between PJM and other pools is now equal to 800 megawatts. During July of this year a peak transfer to PJM of 770 megawatts was made. By 1969, this network transfer capability will grow to 1,700 megawatts, largely because of the installation of the 500-kilovolt interconnection ties.

The foregoing has been an attempt to acquaint this committee with the PJM interconnection and how, through coordinated planning, engineering, and operation, the member companies provide for dependable, economical, and efficient service to the public.

It is the understanding of PJM interconnection that the primary objective of S. 1472, S. 2139, and S. 2140 is to encourage and facilitate the construction of extra-high-voltage intra-area and interarea transmission lines for the benefit of the electric power consumer. PJM is opposed to the enactment of these three bills because we do not believe that legislative action is required to encourage the fulfillment of the objectives of this legislation. The objectives of the bills are already being accomplished by the electric utility industry.

It is our belief that the enactment of S. 1472, S. 2139, or S. 2140 will prove to be unduly burdensome to the proper development of the Nation's electric power system.

Senator LAUSCHE. Why will it be unduly burdensome?

Mr. HARTUNG. We believe that the time factor invloved by the necessity for certification will present a factor in our planning that will be very difficult to overcome.

Senator LAUSCHE. What is the time phase in the bills that cause you to conclude that it will be burdensome?

Mr. HARTUNG. Well, one bill has no time factor, and we must receive FPC approval before we can proceed with construction. That could provide an unlimited time factor. The other bill, the maximum is 2 year before you could proceed with your own plans. I think it would be the planning group's approach that you would have to prepare for a 2-year delay.

Senator LAUSCHE. Now my next question is why would be 2-year delay create the burdens which you say will come into existence?

Mr. HARTUNG. Transmission is planned on a much closer basis than is generation. The leadtime for transmission itself is closer to

the load requirements. And if you were to interpose a certification period between the time that you have approved the plan and the time that it can be started, the advance planning would be costly. You would have to prepare your system for operating condition that much in advance.

Senator LAUSCHE. All right, you may proceed.

Mr. HARTUNG. The delays that would necessarily result from the proposed legislation and the effect of such delays on costs, the service dates of new facilities, and the discharge of the utilities' service responsibilities, would be highly detrimental to the electric utilities and to the public.

Senator LAUSCHE. Now you say that the delays would necessarily result from the proposed legislation and the effect of such delays on cost would be detrimental—in one bill you could not tell how long the delay would be because the matter could be pending interminably. Is that correct?

Mr. HARTUNG. That is correct.

Senator LAUSCHE. The second bill you would have sort of implied certification after the end of 2 years and would be permitted to go forward. Is that correct?

Mr. HARTUNG. Yes, sir.

Senator LAUSCHE. Why would that delay increase your costs?

Mr. HARTUNG. I think you have to go back——

Senator LAUSCHE. I am merely seeking information. I am not trying to cross-examine you.

Mr. HARTUNG. Yes. I think you have to go back into your entire system planning. You cannot take one transmission line as a unit. You must get back even into your generating stations. There you require a leadtime of 4 to 4½ years for a major generating station. At that time you are planning your transmission, but you are not constructing it, because you do not need it up until the time that the power is available to be transmitted.

Now that would be a cost factor if you had to advance your transmission in order to meet or to plan it that far ahead. Transmission is also quite flexible. It can be changed to meet the needs of the business. Power stations cannot. They are there. But the way in which you can get the energy from the power station to the customer is flexible.

You may change your plans between the time that the generating station is conceived and the general transmission for that plant is developed. You can change your plans to meet other needs of the system. If you were to receive FPC approval on a plan, any change that you make you would have to go back to them and get further approval. That we visualize as quite burdensome, because it would delay the ultimate completion or the completion of the transmission system.

Senator LAUSCHE. Mr. Clapp, do you have any comment you would like to make on this question.

Mr. CLAPP. No. I think that covers the point.

Senator LAUSCHE. To summarize your testimony you are of the opinion that the natural force of economics have driven you to coordinate your activities and build lines of the maximum voltage in order to reduce costs to consumers and make your operations more efficient?

Mr. HARTUNG. We do. That is our position. And we think that——

Senator LAUSCHE. To do otherwise, would that be a prudent thing, would it be more productive of profits?

Mr. HARTUNG. No. We think we have achieved the most economical system and have been of the best service to our customers by the actions we have taken, by the system we have developed.

Senator LAUSCHE. Then I think it is your position that you are doing now in the fullest degree what this law would try to make you do by compulsion?

Mr. HARTUNG. Yes, sir.

Senator LAUSCHE. And the law, if passed, would not be beneficial to the consumer nor to the investor, nor to the general services that you can render?

Mr. HARTUNG. That is our position, sir.

Senator LAUSCHE. All right. Mr. Kennedy would like to ask a question. He is a member of the staff.

Mr. KENNEY. I have one question, Mr. Hartung. If the committee either acts or does not act on a bill, it needs to have a complete record and answers to questions that may arise.

The table submitted for the record by Chairman White of the Federal Power Commission the other day indicated that among the States in which the PJM companies operate, Pennsylvania, Delaware, Virginia, and the District of Columbia all require certification by the States for transmission lines. Does that regulation by the States impose the same burden and costs that you mentioned at the conclusion of your statement? How is the committee going to answer the charge that regulations by FPC would be no more onerous that than which you are now subject to in those four States?

Mr. HARTUNG. I cannot answer your question, because I do not know what they are certified on. But I think that our position here is that FPC certification is on a technological standpoint—I don't believe the State commissions are going into that end of it. I don't believe they are equipped with the staffs to pass on whether it is a proper voltage, whether it has the proper terminals, whether you are using the proper equipment. And that is, in my opinion, what the FPC will do. They will use their judgment against the considered judgment of a planning group that is studying and has been studying and living with this situation on a day to day basis.

I seriously doubt that they are or will be equipped to process these things the way people who are working with them all of the time can do.

Mr. KENNEY. Thank you.

Senator LAUSCHE. Thank you very much gentlemen. The hearings on the bill are concluded. The record will remain open until 2 weeks from today. Any further documents that are submitted will be placed in the record with the approval of the chairman of the committee. Two weeks from today is August 12.

Thank you very much for your help.

(Whereupon, at 10:55 a.m., the committee was adjourned.)

(The following communications were received for the printed record:)

BOSTON, MASS., *July 26, 1966.*

WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
New Senate Office Building, Washington, D.C.:

Fervently support S. 1472 and S. 2139 and S. 2140. Current struggle between towns and power company impossible to resolve without progress in technology and assistance from higher Federal authority.

WILLIAM MOYER,
Chairman, New Power and Light Committee,
Wayland, Mass.

RICHMOND, VA., *July 29, 1966.*

Hon. WARREN G. MAGNUSON,
Chairman, Senate Commerce Committee,
Senate Office Building, Washington, D.C.:

The Virginia Electric & Power Co. desires to express its opposition to Federal regulatory control of transmission lines as proposed in Senate bills 1472, 2139, and 2140. The design of transmission systems is exceedingly complex, requiring numerous computer studies in depth, and we do not believe that any regulatory commission, however capable, can exercise the type of regulatory control as proposed by these bills without introducing delays that may become hazardous to reliability of service to electric customers. In some cases, new industry will require transmission on short notice, and we do not believe that regulatory approval will be obtained without introducing unnecessary delays with its adverse economic consequences. Of even greater concern is that delays of regulatory approval could endanger reliability of bulk power supply and precipitate power failures such as was experience in November 1965. To insert further delays in the construction of transmission over and above that already in existence from the shortage of materials and manpower is a very dangerous and ill-advised act.

Please make this telegram a part of your committee record.

A. H. MCDOWELL, Jr.

EAST HADDAM, CONN., *July 25, 1966.*

Senator WARREN G. MAGNUSON,
New Senate Office Building,
Washington, D.C.:

Connecticut Valley Action Committee, nonprofit corporation, speaking for over 14,000 friends of river now involved in court struggle with utilities to block overhead transmission lines and towers over most scenic section now under congressional consideration as national park we support your bills S. 1472, S. 2139, and S. 2140 without reservation.

JULIAN D. ROSENBERG, *President.*

NORTHEAST PUBLIC POWER ASSOCIATION

RESOLUTION

Whereas, control of transmission is a key to control of electricity in the Northeast, and

Whereas, the region's interest in inexpensive power for homes, businesses, and industries would be best served with a high capacity integrated transmission grid available to all utilities on equal terms, and

Whereas, members of the Northeast Public Power Association are prepared to cooperate with other utilities in achieving such a system, and

Whereas, S. 2140 would provide for the certification by the Federal Power Commission of interstate EHV transmission lines and would require that such lines be consistent with a "comprehensive plan for the use and development of the power resources of the area for the purpose of making electric energy reliably available in ample amounts on fair and reasonable terms," and

Whereas, S. 2140 would also require that sufficient capacity be included in interstate EHV lines to meet all needs in the affected area for transmission capacity, whether from public or private generation, including reasonable capacity for expansion to meet future loads,

Now, therefore, be it resolved: That the Northeast Public Power Association urges that Congress enact S. 2140.

Voted: July 26, 1966.

NATIONAL WILDLIFE FEDERATION,
Washington D.C.

CHAIRMAN, SENATE COMMITTEE ON COMMERCE,
New Senate Office Building,
Washington, D.C.
(Attention Mrs. Maurine B. Neuberger.)

DEAR MADAME CHAIRMAN: The National Wildlife Federation appreciates the invitation and opportunity of commenting on S.1472, S.2139 and S.2140, relating to plans for extra high voltage transmission lines, *and would welcome having this letter made a part of the record of the current hearings.*

By way of further identification, the National Wildlife Federation is a private organization which seeks to attain conservation goals through educational means. Affiliates of the National Wildlife Federation are located in 49 states. These affiliates are composed of local groups and individuals who, when combined with associate members and other supporters of the National Wildlife Federation, number an estimated 2,000,000 persons.

It is with gratification and pleasure that conservationists have noted an increasing awareness and concern on the part of governmental leaders and the public for preservation of the natural environment. This relatively new focus of interest will be intensified as the population mounts in numbers and competition for space increases. This concern for the environment is reflected in new interest in controlling pollution, in minimizing pesticide hazards, and in beautification.

The bills under consideration today, as we read them, would provide for the maximum use of existing electric power transmission facilities and it appears reasonable that both public and power entities could benefit from a mutual exchange. The public interest in natural beauty in this regard is served best when the number of surface transmission lines is least.

A basic decision of the Congress must center upon whether the Federal Power Commission shall act in an advisory capacity or in a regulatory capacity. Whatever this decision may be, we believe these principles should be required:

1. That the concept of common carriers be encouraged, both in the interest of economy and for the purpose of minimizing damage to land resources for a variety of purposes, including recreation.
2. That electric transmission lines, by both public and private utilities should be placed underground to the greatest extent possible to minimize undesirable effects on esthetic values.
3. Environmental and esthetic criteria should be required before a utility is permitted to erect transmission lines. These lines not only mar the countryside, but create scars on the landscape and take large amounts of land away from other uses, including recreation.

In our opinion, it is especially important that these principles be required by law or regulation if a utility is given the right of eminent domain, as would be permitted by S.2139. We also believe it is essential that units under cognizance of the National Park Service, the Forest Service, the Fish and Wildlife Service, and the Bureau of Land Management are given suitable protection from the installation of electric transmission lines.

Sincerely,

LOUIS S. CLAPPER,
Chief, Division of Conservation Education.

WILDLIFE MANAGEMENT INSTITUTE,
Washington, D.C.

Senator MAURINE B. NEUBERGER,
Hearing Chairman, Senate Committee on Commerce,
New Senate Office Building, Washington, D.C.

DEAR SENATOR NEUBERGER: The Institute's attention has been called to bills currently before the committee, S. 1472, S. 2139, and S. 2140, on which public hearings are being held this week. It was suggested that conservationists might be interested in the objectives of the bills, at least partially, in that they seek an orderly procedure for the location and erection of electric transmission lines.

Information I have received shows that the mileage of extra-high-voltage transmission lines has increased significantly in recent years and that the erection of thousands of additional miles is contemplated in the immediate future. Surely, anything that can be done to assure that the producers of electrical energy will make maximum use of the same transmission lines, rather than erecting separate lines, and that the location of the lines will be decided on esthetic, land-use and other factors, rather than on mostly the economics of construction, holds promise of minimizing the obtrusive impact of such facilities in many sections of the country. This, alone, would be a worthwhile objective.

To gain this objective, it would appear that any legislation approved by Congress should apply equally to private and public producers of power. Secondly, there is question about the broad conferral of the right of eminent domain that is suggested. There is a case now, in the Sudbury Valley of Massachusetts, where a township commission is refusing to grant a permit for the construction of an unsightly transmission line across its public highways. Would this proposed legislation deny a local unit of government its only authority to protect its landscape from transmission lines?

Finally, subsections (k) and (l) of Section 2, S. 2139 raise some question about the meaning and application of the construction and operation of extra-high-voltage facilities within the "public lands or *reservations* of the United States" under "such *reasonable* terms and conditions" laid down by the administering agency, subject to Federal Power Commission approval. Subsection (l), "notwithstanding any other provision of law" would confer "exclusive jurisdiction" over subsection (k) to the FPC.

Section 4 of the Wilderness Act, Public Law 88–577, authorizes the President to allow the construction of a transmission line in national forest wilderness if he deems it to have a superior public interest. Additionally, transmission lines are not permitted to pass through national parks, and it is not clear whether the subsections mentioned, if approved, would abrogate this long-standing and widely accepted policy.

It is believed that conservationists would support the objectives of an enactment of the kind that is being proposed, if it would result in the construction of fewer transmission lines at locations least damaging to natural beauty, dedicated reservations, and similar areas, while at the same time assuring that dedicated reservations will not be broached.

I would appreciate having this letter made a part of the hearing record.

Sincerely,

DANIEL A. POOLE, *Secretary.*

AMERICAN ELECTRIC POWER CO., INC.,
New York, N.Y.

Hon. WARREN G. MAGNUSON,
Chairman, Senate Committee on Commerce,
New Senate Office Building, Washington, D.C.

DEAR SENATOR: The following statement in connection with Senate Bills 1472, 2139 and 2140 is made on behalf of Appalachian Power Company, Indiana & Michigan Electric Company, Kentucky Power Company, Kingsport Power Company, Ohio Power Company and Wheeling Electric Company, the operating company subsidiaries of American Electric Power Company.

Two of the proposed bills (S. 1472 and S. 2140) would amend the Federal Power Act to enlarge the jurisdiction of the Federal Power Commission (FPC) and require certification of extra high voltage transmission lines, whether existing or to be built (hereinafter sometimes referred to as transmission lines or system), as defined therein, by FPC; would require FPC approval prior to abandonment of such lines; would require, in one form or another, that such lines

be made available to non-owners thereof for transmission of electric energy; and would permit FPC to impose any other "reasonable" conditions found to be necessary in the public interest.

The third bill (S. 2139) would amend the Federal Power Act by requiring that plans and specifications for all electric transmission lines of more than 200 kilovolts should be filed with FPC. Construction of such lines would be held in abeyance for a maximum period of two years, unless FPC approval were forthcoming at an earlier time. Two of the bills (S. 2139 and S. 2140) also provide for eminent domain in the Federal courts, although in S. 2139 that remedy would be available only if the facilities are to be constructed with FPC approval.

Clearly, radical alteration of significant aspects of the existing pattern of individual company or system responsibility for, and discretion in, the planning and construction of transmission facilities, now judiciously circumscribed by the checks and balances of existing State and Federal regulation, can only be justified by a clear showing of a need that the public interest requires such change. Certainly no such showing has been made by anyone and, as far as the proposed bills are concerned, there has not been, so far at least, even a clear statement as to how such bills would improve reliability of service, or assure a more economical supply of power.

For the reasons indicated below, we believe that the disruptive innovations to the existing pattern contemplated by this legislation (1) are not necessary, and (2) would be affirmatively harmful to the continuing development of an efficient, economic and reliable transmission system.

1. THIS LEGISLATION IS NOT NECESSARY

The presently existing, basically voluntary approach to the planning and construction of all transmission facilities has been followed since the very beginning of the industry and has resulted in the development of the most advanced and the most reliable electric utility system in the world today. That system is made up of investor-owned companies, cooperatives, municipals and, to some extent, federally-owned facilities. With very few exceptions, and these under most unusual circumstances, the extensive responsibilities placed on the transmission portion of that system have been met. The physical facilities of the various utility entities joined together to form regional systems by interconnections, coordination arrangements and interchange agreements, generally voluntarily arrived at, have proven, for the most part, to be extremely reliable and economical and are constantly being improved. The extensive planning and research necessary to make possible this highly sophisticated transmission system and to continually improve its reliability, where shown to be necessary, has been forthcoming without government compulsion.

As examples of what has been accomplished under this voluntary approach, the American Electric Power System only recently announced that it was commencing construction of an extensive 765-kv transmission system, the highest voltage in use anywhere in the world—a development which seemed impossible not more than 10 years ago. And, only a short time before, six utilities responsible for providing electric service in the Ohio-Indiana-Michigan-Illinois area announced the construction of new 345-kv interconnections between their systems, which extensive analysis had indicated would further increase the reliability of the service of each of the systems. As analysis of present performance and the projection of future requirements indicate the need for further interconnections and additional facilities, we are confident that the industry will make such improvements rapidly, efficiently and economically. The history of the industry shows that such confidence is not misplaced.

The Federal Power Act clearly recognizes and preserves the voluntary approach to planning and constructing transmission facilities and recognizes that FPC's function is to supplement utility capability by the promotion and encouragement of voluntary coordination of transmission facilities.

Thus, Section 202 authorizes the Commission, in situations other than emergencies, including wartime emergencies, or in connection with the importation or exportation of electric energy to a foreign country, to divide the country into regional districts for the *voluntary* interconnection and coordination of generation and transmission facilities and to *promote* and *encourage* such interconnection and coordination. In addition, to assure that necessary and feasible interconnections are not prevented merely because of the inability of utilities to reach agreement, Section 202(b) authorizes the Commission, upon application of any State Commission or of any person engaged in the transmission or

sale of electric energy, to require interconnections, provided that the Commission shall have no authority to *compel* the enlargement of generating facilities or to compel the sale or exchange of energy when to do so would impair the ability of any of the parties to render adequate service to its customers. FPC, furthermore, can and does communicate its ideas, which carry considerable weight and substantial influence in the industry, by means of suggestions and recommendations made from time to time either formally or informally, as most recently demonstrated through its Industry Advisory Committees, representing all segments of the industry.

The record indicates that the electric utility industry has always given full consideration to FPC's recommendations and has reacted rapidly and effectively to suggestions and recommendations which would improve the efficiency and reliability of service. The industry has also cooperated fully with the Commission in undertaking studies and investigations and has participated in other projects in this connection. Thus, for example, after the northeast blackout in November of 1965, personnel were immediately made available by investor-owned and other utilities (in many cases even though the service of their companies was not affected) upon the request of FPC and such personnel spent a great deal of time assisting FPC in determining the cause of that blackout and means of preventing similar future occurrences.

There is every reason to believe that FPC's significant influence on the planning of transmission faciilties by these means will not only continue, but will increase. Unless it can be clearly shown that industry's cooperation with FPC has ended or that industry is wantonly disregarding or refusing to give full consideration to the suggestions and recommendations of FPC, thereby making the voluntary approach ineffective, there is no need that justifies the drastic legislation proposed.

2. THE LEGISLATION IS AFFIRMATIVELY HARMFUL TO THE DEVELOPMENT OF AN EFFICIENT, ECONOMIC AND RELIABLE TRANSMISSION SYSTEM

For the following reasons, we believe that the proposed bills will very likely discourage and, in any event, delay the planning and construction of transmission lines and, therefore, be harmful to the development of an efficient, economic and reliable transmission system.

The electric utility industry in the past has been given and has accepted the responsibility of providing reliable and economic electric energy service. The industry today stands ready, willing and able to continue to accept that responsibility.

To meet the present and future requirements of its customers for electric energy, the industry must have available, when and as needed, the facilities to generate such power and, perhaps even more significantly, the transmission lines to connect generation facilities with the load centers which require it. These transmission facilities are the backbone of any electric system. And, not only must those facilities connect load and source of energy, but the transmission system must also be capable of providing alternate transmission routes and connections to alternate generation sources, sufficient to meet any foreseeable emergency situation. Obviously, these responsibilities cannot be met without extensive planning. Furthermore, the time required to construct such facilities, under the best of circumstances, some two and one-half years, requires such plannings to be done far in advance of the time that such facilities become operational.

The industry must build many high voltage transmission lines in order not only to achieve even greater coordination and integration of systems with the aim of further improving reliability of service to the consumer by avoiding widespread outages, but also to meet ever-growing power requirements. The vast extension of ehv transmission now authorized or in progress in this country is evidence of the industry's recognition, capability and desire to meet this goal. The proposed legislation would disrupt the orderly carrying out of these programs and make it impossible to project properly necessary expansion in the future.

Under Senate Bills 1472 and 2140, and to an extent under Senate Bill 2139, the FPC would be given sweeping authority to approve or disapprove the size, type and location of transmission lines. Furthermore, unlike state certification statutes which generally limit the Commission's authority to the prevention of wasteful duplication of facilities, the pending bills would involve FPC in determining whether the facilities meet not only the present and future needs of the system proposing the construction, but, in addition, under at least Senate Bill 2140, whether the needs of other utilities in the area, present or future, are met.

The undeterminable but extensive delay in construction of planned transmission facilities which the proposed legislation necessarily involves would seriously impede, if not make impossible, any accurate long range planning and may well make it impossible in certain instances to meet a sudden and urgent, although unexpected, need for service.

The delay and interference, resulting in inadequate power supply and curtailment of service, which have resulted from analogous requirements for government approval in other countries, clearly indicate the detrimental effects which this legislation might well have on the proper projection of necessary expansion of our transmission system.

The fact that the United States has the greatest power system in the world is due in substantial part to utility management's ability promptly to plan and install necessary facilities.

We submit that it would be detrimental to the public interest to erode in this manner the vitally significant planning which must of necessity be done if the transmission facilities necessary to provide reliable electric energy service are to be provdied. As we have stated, the responsibility for providing reliable service remains that of the individual utility company, its management and its staff of technical experts. We submit that it would be highly inefficient, unjust, and inequitable to require companies to bear the grave responsibility of providing reliable service without at the same time having the requisite authority based on its own decisions to determine what facilities are necessary to assure such reliable service. We assume that it is not the intent of the Congress that FPC assume that responsibility.

The requirement in Senate Bill 1472, that certificates issued for operation of existing lines as well as for proposed lines not required for the transmission of electric energy in the ordinary scope of business of the owner thereof shall be made available on a "common carrier basis" for the transmission of other electric energy, not only makes impractical future planning, but may well invalidate much planning that has already been incorporated in existing facilities.

Sound planning and development have for many years included extra capacity, or at least the potential, in transmission lines for future loads. The feasibility of such future planning or the realization of the benefits of such planning in the past are, of course, completely discouraged and negated if such capacity is required to be made available to others.

The requirement that capacity of facilities not required for the transmission of electric energy in the ordinary scope of the Applicant's business shall be available to others on a common carrier basis seems to us to be not only unworkable, but at the same time destructive of the aims which the Commission is trying to accomplish, which must be the assurance of reliable and economic electric service.

Transmission lines, unlike railroad tracks or barge canals, are simply not susceptible to being treated on a common carrier basis. Transmission lines are consructed not merely for the purpose of moving electric energy from point A to point B. An equally important function of transmission lines in a properly designed system is to assure continuation of service in emergency situations, which, by definition, are not in "ordinary scope" of business. To speak in terms of capacity required for the "ordinary scope" of business is, therefore, simply meaningless. Furthermore, transmission lines, at least those in the AEP System, are frequently designed so as to move electric energy in both directions, depending upon where the need for energy at any one time may exist. This assures the possibility of using the most economic generation site at any one time and is, of course, vital to assure reliability. Thus, for example, energy may move northward on a north-south line at one time of day and move southward at another time of day. And while under normal conditions excess capacity may exist, under foreseeable emergencies all of such capacity may be required to assure continuation of service. Without such flexibility, the transmission lines would no longer constitute the integral part of the entire electric system which experience indicates is absolutely vital for economic and reliable service. For these reasons, we believe that to require that transmission lines be made available to others as well as to the owner thereof would make reliable and economical planning of transmission systems a virtual impossibility.

For the reasons set forth above, we urge this Committee not to adopt any of the bills proposed. We believe that passage thereof would be extremely harmful to the industry as a whole and might well result in exactly the opposite results which such legislation is presumably intended to accomplish, namely, the assurance of adequate transmission facilities to assure reliable and economic service.

The electric utility industry, under the presently existing voluntary approach, has had a remarkable history of growth and has continuously provided reliable and economic service. While price indices on most commodities and on all raw materials have drastically risen, the cost of electric energy service has steadily declined. Simultaneously, the ever-increasing demand for electric energy has been met and there is no reason to believe that the projected growth in such demand will not be met. The industry has undertaken extensive research and has spent and is spending literally millions of dollars to develop advanced equipment and new methods for further reducing the cost while increasing the reliability of its service. There has been effective cooperation with FPC and the industry has given full consideration and in most cases has adopted the suggestions and recommendations of FPC. No need to depart from this time-tested and efficient voluntary approach has been shown to exist. We do not believe that proper planning of a reliable and economic and all power system for the entire United States by one central and all-powerful planning agency is feasible. To the extent that the proposed legislation seeks to achieve such central planning, we believe its only result would be the loss of the pre-eminent position which our electric utility industry enjoys today, both from the point of view of reliability and from the point of view of providing economic electric energy service. As a result, we believe no new legislation is necessary in this field and, as we have indicated, believe that the legislation proposed would only harm the potential of the industry to accomplish the great tasks before it in an orderly, reliable and economic manner.

It is respectfully requested that this statement be made a part of the record in connection with Senate Bills 1472, 2139 and 2140.

I have taken the liberty of sending a copy hereof to all members of the Senate Commerce Committee. Under separate cover I am sending you thirty additional copies and this statement.

Sincerely yours,

DONALD C. COOK, *President.*

NATIONAL ASSOCIATION OF RAILROAD
& UTILITIES COMMISSIONERS,
Washington, D.C.

Hon. WARREN G. MAGNUSON,
Senate Committee on Commerce, U.S. Senate,
Senate Office Building, Washington, D.C.

DEAR SENATOR MAGNUSON: Thank you for your recent letter inviting the National Association of Railroad & Utilities Commissioners to testify before the Senate Commerce Committee concerning S. 1472, S. 2139, and S. 2140, which would authorize the Federal Power Commission to review plans for extra high voltage transmission projects.

We believe that the subject matter of these bills requires a substantial amount of additional study. I anticipate that the NRUC will develop a position on this matter during the early part of next year.

Consequently, the NARUC is not prepared to take a position on these bills at the present time.

Please have this letter made a part of the record of the hearings in this matter.

Sincerely yours,

JAMES A. LUNDY, *President.*

THE IZAAK WALTON LEAGUE OF AMERICA,
Washington, D.C.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: The Izaak Walton League of America supports legislation along the lines of S. 1472 and S. 2140 to amend the Federal Power Act to require—

1. Certification by FPC of any proposed transmission line of 200 kilovolts or more capacity, regardless of ownership.
2. Inclusion of environmental and aesthetic criteria among the terms and conditions which FPC shall apply prior to issuing a certificate of public convenience and necessity.

We have studied the statement prepared by the Conservation Foundation, find ourselves in full agreement with it and ask that the League be associated with it.

Sincerely yours,

J. W. PENFOLD,
Conservation Director, IWLA.

NEW ENGLAND ELECTRIC SYSTEM,
Boston, Mass.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR SENATOR MAGNUSON: We believe it would be a mistake to adopt EHV legislation at this time. Enactment of any of the pending bills would make it substantially more difficult to achieve their fundamental objectives.

The objectives of these bills, as we understand them from the text of the bills and supporting statements, are as follows:

1. To encourage and accelerate the construction of high capacity interties between neighboring systems and between neighboring regions.

2. To encourage the optimum use of such interties in the interests of economy and reliability, through the formation of "fully integrated power pools".

3. To make available the advantages of scale thus achieved to all utilities in the region, including smaller utilities who are not themselves in a position to construct and operate major interties.

1. Preliminary certification of proposed EHV transmission lines will not encourage or accelerate their construction. The preliminary regulatory review involved in certification proceedings will add a substantial lead time before construction can begin, and will have the added effect of increasing costs of right-of-way acquisition. The availability of Federal eminent domain powers for right-of-way acquisition would be only a partial offset to these disadvantages.

2. Making certification of EHV lines dependent upon the concurrent formation of a "fully integrated power pool" would require resolution of some of the most difficult business problems facing the electric utility industry, before construction of necessary transmission facilities could commence. We believe that progress will most surely be made if the utility industry is free to construct inter-system and inter-regional interties on the basis of demonstrated engineering and economic advantages, and to work out the necessary contractual arrangements on a case-by-case basis.

The industry has long made a practice of interconnecting independent systems in the interests of economy and reliability. Technological advances during the past decade have again made available economies of scale which can be fully realized only by the joint efforts of two or more neighboring utilities. Power pooling is the only practical alternative to unified ownership if these economies are to be achieved. Utilities in all regions of the country are exploring a wide variety of cooperative arrangements in the light of their own power needs and the individual characteristics of their regional power supply. These diverse developments are desirable and will lead by evolutionary steps to broader regional pooling arrangements.

Each of these individual developments involves a complex assessment of the benefits and costs of the joint undertaking, and the even more difficult task of dividing benefits and costs equitably between the participating utilities. A "fully integrated power pool", involving a long-term agreement for joint planning and for the sharing of benefits and costs of future projects as yet unidentified and unkown, understandably escalates these problems to a new order of magnitude. The National Power Survey makes it clear that neither the industry nor the Federal Power Commission has as yet developed a working model for a "fully integrated power pool" that will fit all situations. The industry, no less than the Commission, believes that broader power pooling arrangements are necessary to take full advantage of modern technology, but believes that progress toward this objective should be by evolutionary steps responsive to the individual needs of each region of the country. The EHV bills would require an *a priori* solution of these problems before the necessary experience has accumulated to point to the best solution.

3. Making certification of EHV lines further dependent upon the concurrent resolution of the problems of the small distributor would add a second problem

of major difficulty before construction of necessary transmission facilities could commence.

The industry, no less than the Commission, recognizes that a small utility system cannot be left in electrical isolation but must be interconnected with the larger utilities of the region. Furthermore, the industry recognizes that the purpose of such an interconnection is to give the smaller utility system and its consumers access to the economies of scale and the advantages of reliability which are inherent in an interconnected operation.

However, the precise method of accomplishing these objectives, and the relative position of the smaller utility in sharing the benefits made possible by interconnection with a larger system, are matters which cannot be resolved in the abstract but which must be worked out in the light of the individual situation of the parties. The range of possible solutions is indicated by Chapter 16 of the National Power Survey, which lists eight general avenues of approach but without detailed analysis of the underlying equities in any individual situation. Moreover, as this chapter of the National Power Survey emphasizes, the Federal Power Commission already has ample jurisdiction to insure fair treatment to the smaller utility system *vis a vis* its larger neighbors. The EHV bills would not add to this protection except at the expense of delaying or frustrating the construction of inter-system and inter-regional interties by the major members of the power pool.

In summary, we would emphasize that no national need has been shown for EHV legislation at this time. The industry is fully committed today, as in the past, to taking advantage of technological break-throughs as they occur. Inter-system and inter-regional interties are being planned and constructed to achieve the economies of scale and the advantages of reliability made possible by the rapid increase in size of generating units and the availability of EHV transmission. As these new facilities are constructed and placed in operation the cooperative arrangements necessary to support them will inevitably lead to broader regional pooling arrangements and to lower power costs for all customers served from the interconnected systems. The customers of the smaller utilities which are interconnected with the major members of the interconnection will share in these benefits on terms which the Federal Power Commission already has power to review.

The first item of business should be the construction of the generating and transmission facilities necessary to take advantage of the new technology. Delaying the construction of such facilities until all related contractual and regulatory problems are resolved would place the cart before the horse: an arrangement almost certain to impede forward progress.

Yours very truly,

ROBERT F. KRAUSE.

STATEMENT FROM THE CONSERVATION FOUNDATION, WASHINGTON, D.C., TO THE SENATE COMMITTEE ON COMMERCE ON S. 1472, S. 2139, AND S. 2140

The Conservation Foundation is a non-profit research and education organization, chartered to promote knowledge of the earth's resources and to encourage human conduct to sustain and enrich life on earth.

The Foundation believes it is increasingly important that careful consideration be given to the environmental effects of technological development. As Vice Admiral Hyman G. Rickover of the United States Navy said recently:

"Much more thought should be given to technological interference with the balance of nature and its consequences for man, present and future. There is need of wider recognition that government has * * * a duty to protect the land, the air, the water, the natural environment against technological damage * * *"

Every modification of the physical environment brings about a series of changes, sometimes beneficial, sometimes adverse, often unforeseen. This does not mean that man should forego modifying the environment. It does mean, however, that we should make every reasonable effort to understand the results of our action, to minimize the detrimental impact of our actions upon the environment, and to take advantage of opportunities for positive benefits.

All that is technologically feasible is not necessarily and automatically desirable. The cost-benefit ratios by which technology is measured must be balanced by concern for the quality of our environment and by consideration of values on which price tags cannot readily be placed.

Too little attention has been given to the health and appearance of our cities in the selection of sites for generating stations and routes for distribution and

transmission lines. As a result, some of our major urban centers are subjected to air pollution from generating stations, to the detriment of the health and well-being of the residents of the area and its physical appearance. Distribution and transmission lines, particularly when they are unwisely located and poorly designed, may be aesthetically offensive, and destructive of agricultural, recreational, industrial, residential and other land uses.

The Foundation believes that increased research is essential to mitigate the undesirable impacts of increasing national needs for power generating and distributing facilities. Research and study ought to cover site selection for electric generating stations, use of fuels in generating stations, problems and prospects for underground transmission, improved planning and design in the construction of necessary overhead transmission lines, and prospects for consolidation and multiple use of utility rights-of-way.

The Foundation therefore endorses the objectives of S. 2507 and S. 2508, on which hearings were held recently by the Senate Commerce Committee, to authorize the Secretary of the Interior to conduct research into underground transmission (S. 2508) and into the effects of overhead transmission lines (S. 2507).

The Foundation also endorses the objectives of S. 1472, S. 2139 and S. 2140, the subject of the committee's current hearings, for they offer an opportunity to promptly minimize the damaging impact upon the environment of new overhead transmission lines which will be constructed in the future.

S. 1472 would require a certificate of public convenience and necessity from the Federal Power Commission before a new transmission line with a capacity of 230 or more kilovolts could be constructed or operated. S. 1472 does not apply to transmission lines constructed by the federal government or by non-federal public bodies.

S. 2140 would require a certificate of public convenience and necessity from the Federal Power Commission before a new transmission line with a capacity of more than 200 kilovolts could be constructed or operated. S. 2140 would apply to all new transmission lines.

S. 2139 would not require a certificate of public convenience and necessity from the Federal Power Commission. It would simply authorize the commission to review proposed extra-high voltage transmission lines with a capacity of more than 200 kilovolts. While it provides for consultation between the commission and the applicant on whether a proposed new line would be in the public interest, anyone wishing to build a new extra-high voltage transmission line would be free to do so after two years from the date of filing with the Federal Power Commission, whether or not approved and certified by the commission to be in the public interest.

S. 2139 and S. 2140 would give the right of eminent domain to an applicant whose proposed transmission line is certified by the Federal Power Commission to be in the public interest. S. 1472 would require as a condition of certification by the FPC that any surplus capacity in the applicant's proposed line shall be made available "on a common carrier basis for the transmission of other electric energy." S. 1472 and S. 2140 would authorize the Federal Power Commission to attach to the certificate "such other reasonable conditions and terms as the public convenience and necessity may require."

The Foundation believes that the public interest would be served best by requiring a "certificate of public convenience and necessity" from the Federal Power Commission before a major new transmission line could be built. Thus we endorse this provision, which is in both S. 1472 and S. 2140.

By encouraging and, in effect, requiring greater cooperative planning, construction and operation of transmission lines, S. 1472 and S. 2140 might serve to reduce the number of new lines which will have to be constructed and the number of new rights-of-way required for their construction. Similarly, the common carrier provision of S. 1472 might also serve to reduce the number of new lines and new rights-of-way required in the future by encouraging maximum and multiple use of existing lines.

Such a result would serve to reduce the number of new scars inflicted on the land and would permit use of the affected lands for purposes such as housing, industry, agriculture, and recreation. We urge the Committee to emphasize the importance of coordinated planning and multiple use of utility rights-of-way in its report on the bills.

The provision in S. 1472 and S. 2140 authorizing the Federal Power Commission to attach "such other reasonable conditions and terms as the public convenience and necessity may require" would also permit the FPC to require that proper consideration be given to the alternative of putting all or portions of a

proposed new line underground. It would also permit the FPC to require that proper consideration be given to the environment, to the aesthetics of the proposed new line, to its location, to the design and appearance of the towers, and to careful use of herbicides to control vegetation on rights-of-way.

The Foundation suggests that the Committee include in legislation on this subject a requirement that the FPC, in determining whether a new line shall be certified, establish and apply criteria which will include considerations such as community and regional planning, zoning, recreation and scenic potential of the route for the proposed line, and the natural beauty of the land involved.

In his statement to the Senate Commerce Committee on May 4, 1966, on S. 2507 and S. 2508, Federal Power Commission Chairman Lee C. White pointed out that in constructing its Woodside line in California, the Atomic Energy Commission went to great efforts to minimize the visibility of the line and to cut as few trees as possible, even transporting utility poles by helicopter.

Chairman White also noted that in exercising its limited jurisdiction over the few transmission lines which are integral parts of licensed hydroelectric projects, the FPC "has required that transmission lines generally traverse wooded and sparsely settled areas and cross ridges where possible through valleys and draws so as to minimize the silhouette of the transmission line tower against the sky. We have also required architectural treatment of the transmission tower exterior to blend into the landscape, so far as practicable, and ordered rights-of-way to be replanted after construction with native materials at road crossings and other major points of public view."

The essential nature of the electric power industry is evident. It is underscored by the provision in S. 2139 and S. 2140 which would grant an electric power company the right of eminent domain to acquire land and right-of-way for a line certified to be in the public interest. In return for extending this power of government to a non-government entity it would be logical and reasonable to apply comprehensive standards—including tests of the impact of the line upon the environment—before granting certification.

The Foundation favors the provision in S. 2140 that an FPC certificate of public convenience and necessity ought to be required before any new transmission line with a capacity of more than 200 kilovolts can be constructed, whether by a privately-owned power company, the federal government, or by a non-federal non-profit entity. The exemption of lines constructed by the federal government or a non-profit non-federal entity would create a double standard. We can see no reason why the same standards should not apply to all major transmission lines.

The Foundation believes the bills under consideration by the Committee present Congress with an opportunity to establish as national policy the concept that the principles of wise use and development and conservation of land resources shall be applied in the planning, construction and operation of new transmission lines. Some 250,000 miles of overhead transmission lines now span the nation, according to the FPC. More are constructed each year. In the year which ended June 30, 1965, there were 13,905 miles of high voltage lines placed in service. Of that total, 3,656 miles of lines had a capacity of 230 kilovolts or more.

According to the FPC Advisory Committee report on underground power transmission, a 230-kilovolt line requires a 125-foot right-of-way, or 15.5 acres per mile. The 2,744 miles of 230-kilovolt lines put in service in the year ended June 30, 1965 thus consumed 42,532 acres of land.

In addition, the 629 miles of 345-kilovolt lines put in service that year, requiring a 150-foot right-of-way, or 18.18 acres per mile, consumed 11,435 acres of land.

In total, the 230-kv and 345-kv lines put in service in that one year consumed 53,967 acres of land.

In its 1964 National Power Survey, the FPC said that "while there are no transmission lines with voltages higher than 345 kilovolts in commercial operation in this country today, by 1967 more than 3,000 miles of 500-kilovolt lines are expected to be in operation."

More and more land will be required for overhead transmission lines. These lands and lands adjacent to them which would be affected by the lines have important values to those who own them and to the nation as a whole. As a general principle, lands dedicated to power transmission should be held to the minimum necessary in the public interest.

Similarly, the aesthetic impact of both existing and proposed overhead transmission lines are significant. What this impact will be will depend on whether we apply our technology and wealth in the location and design of necessary lines

with the realization that how and where such lines are constructed have a significant bearing on the environments in which millions of our people live and work and seek leisure.

The Foundation believes enactment of the legislation now before the Committee would be a logical step for Congress to take, in keeping with the welcomed and constructive conservation legislation of recent years in such fields as open space acquisition, recreation, and air and water pollution abatement and control.

Congress is to be commended for its awareness and concern for the conservation and environmental quality aspects of our life. The commitment of the Administration, of Congress and of increasing numbers of private citizens to what has come to be called "natural beauty" is symbolic. It indicates a deep concern for the quality of our total environment.

The December 30, 1965 decision of the U.S. Second Circuit Court of Appeals in New York is a significant and pertinent case in point. In reversing a Federal Power Commission decision to license a hydroelectric project on the Storm King Mountain on the Hudson River, the court found that the FPC had neglected to assign proper weight to the Hudson's recreational and scenic values. The court declared the commission could not "act as an umpire blandly calling balls and strikes for adversaries appearing before it; the right of the public must receive active and affirmative protection at the hands of the commission."

This meant the commission should have evaluated alternatives. This meant the commission should have explored the possibility of underground transmission lines at the project. This meant the commission should have considered the project's effect on fisheries and other aquatic life. The court ordered new hearings on all these questions.

It is also significant that the FPC now requires consideration of recreation and fish and wildlife values by applicants for hydroelectric licenses.

It would be appropriate and desirable for Congress to authorize the commission to apply similar environmental considerations to major new transmission lines.

The Conservation Foundation therefore favors enactment of legislation along the lines of S. 1472 and S. 2140.

Specifically, the Foundation suggests amending the Federal Power Act to require—

1. Certification by the FPC of any proposed transmission line with a capacity of more than 200 kilovolts, regardless of ownership of the line.
2. Inclusion of environmental and aesthetic criteria among the reasonable terms and conditions which the FPC shall apply before issuing a certificate of public convenience and necessity.

STATEMENT OF GUS NORWOOD, EXECUTIVE SECRETARY, NORTHWEST PUBLIC POWER ASSOCIATION, BEFORE THE COMMITTEE ON COMMERCE, U.S. SENATE, RELATING TO S. 1472, S. 2139, AND S. 2140

Mr. Chairman and members of the committee, my name is Gus Norwood. For the past 19 years I have served as Executive Secretary of the Northwest Public Power Association comprising 125 public and cooperative electric systems of Alaska, British Columbia, Washington, Oregon, Idaho, and Montana.

Consumer-owned electric systems serve about 51% of the regional population, own about $3 billion in electric plant and have about $1.6 billion of new plant under construction, generate about five million kilowatts and pay about $45 million per year into the United States Treasury for power from federal dams.

STATUS OF TESTIMONY

Although our Association has no resolution specifically on these bills, we have numerous resolutions and policies on transmission lines and we believe our testimony is consistent with these policies.

STATEMENT OF POSITION

We hope the Committee will publish the hearing record so it can be available for study by the electric utility industry and so that our systems can develop policy positions by the time the next Congress convenes.

We recognize the need for federal guidance in the high voltage transmission field and we recognize that a great public concern exists regarding the proliferation of transmission lines. We have heretofore supported bills for research on underground transmission.

NATIONAL CONCERN

The bills may not adequately focus attention on the national concern and objectives. The policy of the Congress should be to encourage, facilitate and, if necessary, require the installation of large capacity, optimum transmission lines to insure nationwide coordination and economical transmission consistent with minimum damage to the landscape. This may require reuse of existing right-of-way by replacing low capacity transmission lines with high capacity, high voltage facilities.

The vague term public interest should be buttressed by legislative history. In the Northwest one concern is to minimize the cutting of 300 foot swaths through heavy forests. Another one is to minimize river crossings which create hazards for aircraft. Another is to reduce the visibility of transmission lines from major highways.

JURISDICTION

The establishment of FPC jurisdiction over federal and municipal lines as well as over private lines creates some concern among our people. Obviously we would not want such jurisdiction to be the means or leverage whereby a large utility could exert pressure on a small utility.

Another concern is regarding FPC jurisdiction over federal power marketing agencies particularly as regards (a) authority to build federal lines whether private utilities contend that private lines should be built instead, and (b) weakening the jurisdiction of the Secretaries of Agriculture and Interior in granting or refusing to grant easements over federal lands.

We particularly question S. 2139 in permitting transmission construction in defiance of FPC disapproval.

CONCLUSION

These bills present some problems which indicate the desirability of more time for discussion within the industry.

Accordingly we urge that the hearings be published and that the matter lay over to the next Congress.

DUKE POWER CO.,
Charlotte, N.C.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, New Senate Office Building, Washington, D.C.

DEAR SENATOR MAGNUSON: On behalf of Duke Power Company, an electric utility serving over 800,000 customers in the 20.000 square mile Piedmont area of North and South Carolina, under the regulatory jurisdiction of the North Carolina Utilities Commission and The Public Service Commission of South Carolina, I respectfully offer the following comments on S. 1472, S. 2139 and S. 2140 which are now the subject of hearings before your Committee.

I have read the statement to be presented to your Committee on Friday, July 29, by Mr. William J. Clapp, President of the Edison Electric Institute, and I concur fully in Mr. Clapp's conclusions and adopt his statement as being the position of Duke Power Company.

In addition to the points made by Mr. Clapp, I think the Senate Committee on Commerce should be aware that the voltages mentioned in all three of these bills as being "extra high voltage" are not in fact extra high voltage transmission lines in the present state of recent technological advancements. The Metcalf bill (S. 1472) designates 230 kilovolts as being extra high voltage. The so-called "voluntary approach" endorsed by a majority of the Federal Power Commission (S. 2139) and the "compulsory approach" suggested by other members of the Federal Power Commission (S. 2140) both define extra high voltage as 200 kilovolts and above. Actually, the backbone transmission system of Duke Power Company and many other major electric utilities today is 230 KV. I am sure that it was not the intent of the drafters of these bills to subject to Federal Power Commission certificate jurisdiction the internal transmission systems of any companies. But defining "extra high voltage" at these levels has this effect. Today, nothing smaller than 345 kilovolts or possibly even 500 kilovolts can be accurately characterized as "extra high voltage" transmission lines.

I think the Committee should also be aware that when Congress enacted Part II of the Federal Power Act in 1935, it deliberated and debated at some length the question of whether to give the Federal Power Commission certificate jurisdiction over interstate transmission lines. Such a provision was included in the first draft of the bill, but was deleted prior to the passage of the bill in its final form. For the reasons stated by Mr. Clapp, we see no necessity of Congress changing its intent in this respect.

In support of Mr. Clapp's premise that the electric utility industry has been and is continuing to construct high capacity interconnections between companies and between systems on a voluntary basis, and that passage of this legislation would simply delay such construction, I would like to cite the example of Duke Power Company and neighboring companies. At the time Duke Power Company entered into the Carolinas-Virginias Power Pool Agreement with Virginia Electric and Power Company, Carolina Power and Light Company and South Carolina Electric and Gas Company (which is on file with the Federal Power Commission as a rate schedule of each company) Duke Power already had one major interconnection with Appalachian Power Company, five major interconnections with Carolina Power and Light Company, one with South Carolina Electric and Gas Company, two with Georgia Power Company and two with Yadkin, Inc., a manufacturing subsidiary of Aluminum Company of America. Since the signing of the Carolinas-Virginias Power Pool Agreement Duke has constructed two additional 230 kilovolts interconnections with Carolina Power and Light Company, a 230 kilovolt connection with the Army Corps of Engineers Hartwell Dam on the Savannah River, and with Georgia Power Company. It has plans to increase the capacity at seven of these existing interconnections within the next three years. Other members of the Carolinas-Virginias Power Pool now have scheduled for 1967–69 construction the following interconnections:

1. CPL–VEPCO, 1969: 230 KV from Greenville, N.C. to Aurora, N.C.
2. VEPCO–Alleghany, 1968: 500 KV from Mt. Storm to Fort Martin.
3. VEPCO–Appalachian, 1967: 500 KV from Dooms to Roanoke.
4. S.C.E. & G. CO.–CPL, 1967: 230 KV from Canadys to Sumter.
5. CPL–VEPCO, 1967: 230 KV from Rocky Mount to Gaston.

From 1969 through 1973, Duke and the other members of the Carolinas-Virginias Power Pool are planning the following new interconnections:

1. Duke–Appalachian, 1969: 500 KV from Greenville, S.C., to Saltville.
2. Duke–Appalachian, 1972: 230 KV from Mitchell River to New River Hydro.
3. CPL–Appalachian, 1971: 500 KV from Roxboro to Roanoke.
4. CPL–VEPCO, 1972: 500 KV from New Bern to Norfolk.
5. Duke–S.C.E. & G. Co., 1970: 230 KV from Pacolet to Columbia.
6. Duke–CPL, 1973: 500 KV from Cowans Ford to Fayetteville.

I feel that this record of existing and planned construction is positive proof of Mr. Clapp's assertion that the industry is doing the job voluntarily and that no problem exists which requires further amendment to the Federal Power Act.

It is respectfully requested that this statement be incorporated into the record of the hearings now being conducted by the Senate Commerce Committee on S. 1472, S. 2139 and S. 2140.

Sincerely yours,

W. B. McGUIRE,
President, Duke Power Co.

MIDSTATE REGIONAL PLANNING AGENCY,
Middletown, Conn.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Word has just been received by this office of hearings currently being conducted by the Senate Commerce Committee on S. 1472, S. 2139 and S. 2140, which are modifications of the proposed legislation regarding burial of powerlines, which was heard by the Committee on May 4, 5, and 6, of this year.

Since we have not yet seen the proposed legislation and are therefore not aware of the specific effects of the proposed modifications, we can only reiterate the position already taken by this Agency.

The Midstate Regional Planinng Agency will support any legislation which will—

(1) effectively centralize responsibility for the overall evaluation of the implications of powerline construction proposals, and,

(2) assist in the exploration, development and administration of measures necessary to control and/or encourage the underground placement of powerlines in a manner consistent with the long term public interest.

Respectfully,

IRWIN KAPLAN.

NATIONAL CONSUMERS LEAGUE,
Washington, D.C.

Hon. WARREN G. MAGNUSON,
Chairman, Senate Commerce Committee,
U.S. Senate, Washington, D.C.

DEAR SENATOR MAGNUSON: In an era in which prices for consumer goods appear to be constantly increasing, the price of electric power has been decreasing. This is a reflection of the vast technological advances which have lead to cost reductions in the electric industry. Additional potential economies available to the electric industry, including the increased use of extra-high-voltage transmission lines, indicate the possibility of further rate reductions in the near future.

In the opinion of the National Consumers League, cost reductions in the industry, leading to rate reductions that will benefit the individual consumer, could be accelerated by enactment of S. 2140. This bill will allow the Federal Power Commission to regulate the construction, extension, modification, maintenance and operation of extra-high-voltage transmission lines. The bill would require that lines must be consistent with a comprehensive plan for the power needs in the affected area. This would mean that all electric utilities in the area, as far as economically feasible, would have access to the transmission lines at fair and reasonable rates.

At the present time, large electric utilities are able to build their own transmission lines, and to refuse permission to allow smaller utilities to use these lines, or to charge prohibitive rates for their use. The small utility is forced to either build its own line or pay a heavy tariff. Because the costs of smaller utilities are exaggerated by their transmission expenses, they are forced to charge higher rates. Larger companies can, therefore, charge more, increase their profit margin, and still maintain a competitive position vis-a-vis these rates. The higher costs are paid by the consumer. S. 2140 would provide that all utilities in the area have access to the transmission lines, thereby eliminating needless duplication of transmission facilities and enabling an entire area to be served by a single, or comparatively few, extra-high-voltage transmisison lines.

The great cost advantage of extra-high-voltage transmission is due to the fact that as the size of a transmission line increases, the amount of power it can carry is multiplied; for example, a 700-kilovolt transmission line can carry 13.5 times the amount of power that a 230 kilowatt line can carry. This means that it would take thirteen and one-half 230 kilovolt lines to carry the same amount of power as one 700 kilovolt line. The economy of having one 700 kilovolt line rather than over thirteen 230 kilovolt lines may be illustrated by the savings in the cost of right-of-way and clearing. It would cost, on an average throughout the country, $18,000 to purchase right-of-way and clearing for one mile of one 700 kilovolt line. It would cost $135,000 to purchase right-of-way and clearing for 13.5 one-mile long 230 kilovolt lines. The savings in one mile of line for right-of-way and clearing, alone, would be $117,000. This means that the savings gained by the construction of one 700 kilovolt line covering a distance of 100 miles would be over $10 million.

Similar savings may be obtained in the comparative cost of labor and materials. If one line is utilized to serve the needs of an entire area, these savings could be realized and passed on to the consumer. If, however, the present situation persists, and smaller companies are forced to utilize separate lines or to pay unreasonable rates for using large transmission lines, the consumer will not receive the possible reduction in costs in his monthly rate charge.

Moreover, this bill, by serving to reduce the number of new lines which might be constructed, would also reduce the number of new rights-of-way required. This should result in a reduction of new scars defacing our countryside, and

might even result in more land available for recreation, and for our greatest present need—housing.

For these reasons, the National Consumers League supports S. 2140. To guarantee that the consumer will benefit by the technological advances in the area of transmission, there must be regulation of the use of extra-high-voltage transmission facilities. With regulation, the consumer is guaranteed that there will be no needless duplication of facilities, and that industry cost reduction can be reflected in his monthly electricity bill. We therefore respectfully urge that the Senate Commerce Committee report out S. 2140 favorably.

Sincerely yours,

SARAH H. NEWMAN,
General Secretary.

STATEMENT OF ALVIN W. VOGTLE, JR., EXECUTIVE VICE PRESIDENT, THE SOUTHERN COMPANY, BEFORE THE SENATE COMMERCE COMMITTEE, REGARDING S. 1472, S. 2139 AND S. 2140

My name is Alvin W. Vogtle, Jr. I am executive vice president of The Southern Company, speaking on behalf of our system and its operating utility companies, Alabama Power Company, Georgia Power Company, Gulf Power Company and Mississippi Power Company. The Southern system is a completely interconnected and co-ordinated pool of long standing, serving an area of 120,000 square miles in four states and having a peak to date of 8064 mw, with a principal transmission voltage of 230 kv.

We wish to oppose the enactment of S. 1472, S. 2139 or S. 2140 because such legislation would not promote its stated objectives[1] but indeed would have the opposite effect. The bills would create serious threats to reliable service from power systems. Proper planning of system additions would be crippled. Needed lines would either not be built, would be unduly delayed or lines of lower voltage would be used. New and burdensome competitive problems are inherent in the legislation and new obstacles would be placed in the way of effective state regulation. Excellent co-ordination is being achieved now among power systems in the nation on the basis of enlightened technology, with its benefits made generally available to smaller systems, both public and private, aided by FPC's present authority to order interconnections.

We briefly detail our objections below:

1. *System planning would be impeded.*—A truly reliable power system, planned and developed within acceptable economic bounds, requires the exercise of technical planning skill by those intimately familiar with the individual characteristics of the area, together with the exercise of managerial prudence. Such planning ordinarily does not provide any "excess" transmission capacity, with the rare exceptions being of only one or two years' duration. This planning principle has been proven by the successful experience of completely co-ordinated power pools, such as the Southern system, both in reliability of service and economy of operation. However, in the view of those not having detailed knowledge of the system characteristics, such transmission lines could appear to have "excess" capacity. Demands for the use of such "excess" by other parties, either through "common carrier" requirements or ordered by FPC ruling, would necessarily involve serious risks of catastrophic power outages since the utilization of this capacity would remove the margins required to meet contingencies on our own system.

It is important to note that the "interstate" transmission lines subject to the proposed legislation do not connote merely interconnections with outsiders or between sister companies across state lines. Such "interstate" transmission lines would include, under current FPC interpretations, any and all transmission lines in an interconnected system operating in parallel—among them, for example, a line as short as twenty miles connecting a generating plant to a nearby load. The Southern system has over 2,500 miles of 230 kv lines of which less than 150 miles are for interconnections with neighboring systems. Thus, the licensing requirement would impose new controls upon the system's internal trunk transmission lines (already of proven worth), without any real beneficial purpose being realized thereby.

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[1] As recited in S. 2139: "* * * to encourage and facilitate the construction of extra-high-voltage electric transmission lines which are in the public interest and to avoid delays in construction of such lines in order to help make electric energy available throughout the nation in ample amounts, at low cost, and on fair and reasonable terms."

Planning for reliable and economic electric service would be greatly hampered by the proposed legislation. Utilities cannot plan individual lines but must plan a complete and co-ordinated transmission system. New generating units must be planned on the basis that associated lines can be built where and when needed. Licensing the associated transmission lines would in effect give the Commission control and veto power on plans for generation. The generating units must be determined as to type, size, and location at least four years in advance of use. After such determination, detailed transmission studies require about a year and an additional three years of elapsed time is necessary before the lines are completed and usable. It is almost inescapable that parties seeking to share in the use of proposed lines will demand extensive hearings and a considerable delay in authorization (two years in the case of S. 2139) for each line could result. Even with the risk of shortcutting transmission studies, lines could be delayed at least eighteen months beyond the required in-service date. Accordingly, it may be necessary to provide for an excess in generating capacity amounting to some 15 to 20 percent of system load greater than otherwise would be required, based on Southern's annual growth of around nine percent per year.

The responsibility of each utility company to meet its load requirements is an inescapable one. The task is unique in each instance. No outside agency is in a position to make the necessary decisions on the number, voltage, capacity, routing, and switching of transmission lines to assure reliable service and reasonable cost as well as the people who work continually with the utility and its system. In effect, the proposed legislation would leave the licensed utility company with full responsibility for the reliable supply of electric service but would take from it the authority to carry out the planning and managerial decisions essential to assure such electric service reliability.

2. *Construction of EHV facilities would be delayed and discouraged.*—The process of system planning is a time consuming one. Adding the delay inherent in licensing procedures (to say nothing of the adversary procedures that can develop through intervention, disputes over "excess" capacity, and the like) would do the very opposite of "avoiding delays in construction," the asserted purpose of the legislation.

Such long delays would prove crippling. There is no assurance that the postponement would be limited to two years when review and appellate procedures are availed of. Rather than risk such a wait, those subject to the licensing jurisdiction would be encouraged to build larger amounts of 161 kv transmission, or lower voltage, in order to avoid the hazards to reliability and economy which are inherent in the proposed certifications. This would bring about a reversal of the present trend toward expanded coordination. These delays, which should not be imposed on a responsible utility company seeking to meet the load obligations of its system, could be used as a weapon to compel compliance with conditions unacceptable and, perhaps, not otherwise enforceable against the regulated company.

Right-of-way acquisition may be delayed also. While in our system's area the existing state condemnation laws and procedures have proven satisfactory for right-of-way acquisition, we recognize that the proposed right of condemnation through federal courts, taken by itself, might be of help in some instances in securing rights-of-way. However, in combination with other features of the bills, the net effect on procurement of rights-of-way would be harmful. All purchases of rights-of-way would need to be made after publicity on the routing, timing, and need for each line. Therefore, the cost of right-of-way would be increased, the purchase thereof delayed and a much greater percentage of the right-of-way would need to be secured through condemnation.

3. *Regulation by existing state bodies would be made difficult or sacrificed entirely.*—The certification of lines as proposed in the bills would necessarily involve determinations of economic feasibility. The pre-emption by FPC of the certification of convenience and necessity for lines over 200 kv would make extremely difficult, or take away entirely, the historical jurisdiction of the states on such questions as the regulation and control of capital structures, rate bases, and the allocation of service territory. Economic feasibility cannot be determined apart from rate questions and the introduction of such rate questions in the certificating procedures would prolong the procedures and leave the state bodies having responsibility in such areas, at the very best, in a state of constant doubt and confusion. This is a radical departure from existing national policy.

4. *Burdensome competition would be fostered and controversy promoted.*—It must be recognized that the investor-owned utility industry faces vigorous

competition from federal government power marketing agencies, cooperatives, municipalities and other public bodies. The "common carrier" provisions in the proposed legislation (S. 1472) or the FPC's conditioning power could be readily availed of by competitors to require the transmission facilities of the regulated companies to be used as a vehicle for transportation of power to permit the competing body to take away the customers of the regulated company. The regulated company may be forced to allocate part of its system to validate the otherwise inadequate system of the competitor. The legislation must be considered in the existing context of federal power marketing legislation where the competitors of the regulated companies are granted a preferential status in the receipt of government-generated power.

S. 1472 and S. 2140 would, in effect, authorize the Commission to impose upon investor-owned utilities the burden and risk of supplying competing public-owned or REA-financed systems with transmission connections which could, and undoubtedly would, be used to take away customers of the investor-owned utilities. The legislation could be used to enable such competing systems to use their tax-free and abnormally low interest cost status to extend their service far beyond their existing markets. For example, an REA-financed generating and transmission (G & T) cooperative in the State of Alabama has already publicized its plans to extend its service to nine distributing cooperatives now served by Alabama Power Company as soon as such G & T can obtain the generating and transmission capacity to do so. With the guidance and participation of REA seven of such distributing cooperatives have already entered into 35-year contracts to take all their power requirements from the G & T when it can deliver power to them. With the proceeds of a $20,350,000 REA loan the cooperative is now engaged in the construction of a steam generating plant to be used to displace the service of Alabama Power Company to certain of such distributing cooperatives. Should S. 1472 or S. 2140 be adopted, it is probable that the FPC would be pressed to require Alabama Power Company to provide transmission line connections for the competitive benefit of the G & T cooperative as a condition of the Company's securing a certificate of convenience and necessity for lines it proposes for the purpose of serving its present customers or interconnecting with utilities in neighboring states.

It is not difficult, then, to imagine that the proposed certification legislation will bring about constant interventions before FPC, with allegations that reserve capacity in the regulated company transmission lines is "surplus" or "excess", or attempting to require planning of the regulated system in such a way as to permit the competitor an advantage in taking the customers of the regulated company. We note that the statement filed in support of the proposed legislation by the REA Administrator seeks exemption of "public bodies and cooperatives" from the licensing provisions and that the Department of the Interior has sought the exemption of federal government power agencies from those same licensing provisions. These requested exemptions would completely defeat the "comprehensive" planning which the legislation is supposed to advance, while magnifying and enlarging the competitive threat. The threat exists without the exemptions, but the efforts by REA and Interior to obtain exemptions underscore the difficulties of the competitive position in which the legislation would place the investor-owned companies. The resulting controversies, which can readily be forecast, are undesirable as a matter of national power policy.

5. *Available procedures are effective.* The information and reporting channels now available to FPC, its control of interstate and wholesale contracts and its powers with respect to interconnections under Section 202 of the Federal Power Act provide everything that is necessary for FPC to guide and facilitate EHV construction and to assure any needed interconnections. Joint efforts at interconnection, through enlightened self-interest, have made notable progress. The proposed bills are unnecessary and defeat their own purpose.

OHIO EDISON CO.,
Akron, Ohio, August 10, 1966.

Hon. WARREN G. MAGNUSON,
Chairman, Senate Committee on Commerce,
New Senate Office Building, Washington, D.C.

DEAR SENATOR MAGNUSON: We wish to express our opposition to S. 1472, S. 2139 and S. 2140, hearings on which have recently been concluded by your Committee.

Each of these bills would vest in the Federal Power Commission control over the construction and operation of extra high voltage (EHV) transmission lines.

Both S. 1472 and S. 2140 would prohibit construction and operation of such lines without prior approval of F.P.C., while S. 2139, which adopts the so-called "voluntary" approach, could prevent construction of transmission facilities for a period of two years.

Under any of the above bills it is reasonable to expect that an applicant for approval, even though ultimately successful, will be required to experience the type of delays always inherent in the regulatory process. Such delays will serve only to impede the orderly development of not only the applicant's system, but the system or systems with which it is proposed to be interconnected.

The supposed objectives of these bills is to promote optimum economy and service reliability through the continuous strengthening of the nation's network of interconnected transmission lines. These goals are as important to persons within the electric utility industry as they are to our regulatory agencies and the consumers our industry is dedicated to serve. Our opposition therefore, is based also on our view that the prerogative of deciding how these objectives can best be achieved should, unless somehow abused, remain with those persons who are directly responsible for their achievement.

Many examples of the success of the efforts being made to strengthen various interconnections and power pools were given in the testimony of witnesses who appeared before your Committee. Their testimony amply demonstrated that all segments of the industry have been able to cooperate fully in their efforts to achieve results beneficial to all participants. To suggest now that an intermediary, such as F.P.C., is needed to settle differences that *may* arise is to ignore the exemplary record of progress being made. What is worse, it may perhaps invite the differences the industry has so far been able to avoid.

The responsibility for providing the most reliable and economical electric service possible is first and foremost the reesponsibility of the industry itself. In our judgment the industry must therefore be in a position to freely decide how that responsibility can best be discharged. And as long as this prerogative is not abused, and the prevailing evidence indicates quite the contrary to be true, legislation which would tend to inhibit the exercise of the prerogative is not only unnecessary but may well be harmful.

We therefore urge your committee not to recommend S. 1472, S, 2139, or S. 2140 for passage.

Very truly yours,

D. BRUCE MANSFIELD.

STATEMENT OF CITIZENS OPPOSED TO POWER TOWERS, READINGTON CHAPTER, INC., FOR SENATE COMMERCE COMMITTEE HEARINGS ON S. 1472, S. 2139, AND S. 2140

Citizens Opposed to Power Towers, Readington Chapter, Inc. wholeheartedly supports the intentions of S. 1472 and S. 2140 with one exception. Our membership of over 400 persons firmly believes that interstate electric transmission lines should be subject to review and approval by the Federal Power Commission, but that federal eminent domain right for the private power companies to build such lines are neither necessary nor desirable. We oppose S. 2139 because it does not give the federal government any real control over a serious situation which is virtually unregulated at present.

Our own experience with the half million volt Keystone line in New Jersey illustrates the necessity for regulation at the federal level. During the past year, in cooperation with other citizen groups in New Jersey, we participated in extensive hearings before the New Jersey Public Utility Commission regarding Public Service Electric and Gas Company's transmission lines associated with the Keystone project. Our group in common with the others opposed running new transmission lines through still unspoiled areas of our State. We felt that these lines should be installed underground if at all possible, and it not, that existing corridors of blight created by railroad lines and existing tower lines should be utilized. We recognize the need for additional electric power in our rapidly growing state and we fully understand that such power must be transported from the generating sites to the load areas where it will be used.

Experts advised that underground high voltage transmission lines of relatively long uninterrupted lengths would serve their purpose better both technically and economically if direct current were used. The high cost of direct current lines is in the conversion equipment at each end of the line. Electricity must be generated as alternating current, converted to direct current for transmission and then reconverted to alternating current for consumption. The longer the transmission line, the lower the per mile cost. Material and labor costs for

buried DC cable are less than for AC cable because DC requires only two conductors instead of three. Excluding conversion costs, DC cable installation costs are roughly comparable to those of overhead lines. The overall cost of underground AC installations is high due to the necessity for reactor stations at frequent intervals (every 15 to 20 miles at 500 kv) to compensate for power losses in the cable insulation.

DC is technically superior to AC for major interconnections because the conversion equipment itself acts to dampen giant power surges like that which spread the blackout throughout the northeast last November. The weakness of major AC interconnections was clearly demonstrated at that time. The PJM power pool was not affected by the blackout because its interconnections to the troubled areas were weak and broke immediately under the power surge. Had there been high capacity interties the snowballing effect of the blackout might very well have spread through the entire PJM system down to Washington, D.C. itself. Also a line can carry more power as DC than as AC. Hence Consolidated Edison's 345 kv AC cable could carry 500 kv as DC.

The hearings before the New Jersey Public Utility Commission began when Public Service applied for the right to exercise the power of eminent domain over the unacquired 5% of the lands along their Holland Branchburg right-of-way. Actually Public Service's responsibility for the transmission line begins at the Delaware River in Holland Township, Hunterdon County, New Jersey. The transmission line itself starts at Juniata Station near Harrisburg, Pennsylvania and runs for over 100 miles without interruption to the Branchburg Switching Station near Centerville in Branchburg Township, Somerset County, New Jersey. Only the last 20 miles of the line are in New Jersey.

There was no point in arguing for direct current transmission for this line, since the New Jersey PUC's jurisdiction does not cover the major Pennsylvania portion. Nor did it make sense either engineering or cost-wise to propose the use of direct current for just the few miles in New Jersey.

Therefore the idea of proposing direct current for the main Keystone transmission line from Harrisburg was abandoned and a DC system was proposed for the 70 miles Branchburg-Suffern intertie with Consolidated Edison instead, since all but the last couple of miles of this line would be in New Jersey. This decision was made with reluctance because everyone realized that ideally both lines should be direct current. Ironically Public Service cited this lack of argument for the main Keystone line as a purely selfish action on the part of the objectors.

Under present conditions there is no real possibility for review and regulation of interstate transmission lines. Yet the safety and welfare of the entire nation may be in serious danger if the proposed nation-wide power grid is installed as alternating current. The advantages of DC transmission need to be explored more fully, but this cannot be done on a piecemeal basis by individual state regulatory agencies. The planning of such an interstate grid can only be adequately regulated at the federal level. This is obviously a job for the Federal Power Commission.

Our organization feels that federal eminent domain powers for FPC approved lines are both unnecessary and undesirable. Our states have different practices regarding eminent domain for good and sufficient reasons. Most of the new nation-wide power grid will be built by private power companies, franchised in individual states and with access to eminent domain powers through their state regulatory agencies. If the states so wish, eminent domain powers could be granted automatically for FPC licensed projects without the need for further hearings at the state level. But this should remain a prerogative of the regulating state. It is not the purpose of the FPC to promote the business interests of private utilities. The federal interstate highway system is being built without the use of federal eminent domain powers. AT&T installed an underground telephone cable all the way across the continent without any eminent domain power at all. Our private utilities are not helpless. They can do very well with the powers they have now.

Nor should the problem of out-of-state companies constructing lines in states where they are not recognized prove a serious problem. The lines of this grid system are being built in cooperation with neighboring utilities. With the Keystone project, partner companies are responsible for construction of transmission lines in their own areas. In fact Public Service was highly indignant at the idea that they should tell Consolidated Edison to accept a DC transmission line for the last couple of miles of the Branchburg-Suffern line which were to be in New York state.

Granting federal eminent domain powers would be undesirable in that it would tend to encourage the power companies in their proliferation of overhead lines. The American power industry has a world-wide reputation for being ultra-conservative. In our experience there appears to be an entrenched mental resistance to change similar to that which helped bring the railroad industry to its present sorry condition. This was clearly demonstrated both at the PUC hearings in New Jersey and at the Senate Commerce Committee hearings on Senator Neuberger's bills on underground power lines just this summer. The private power companies are strongly resisting all public sentiment to bury transmission lines, and are doing everything in their power to delay the proposed research program.

To maintain its competitive position with respect to other fuel industries the private power companies must keep costs down. Overhead power lines are cheaper than underground simply because so little underground work has been done. Overhead transmission lines have been in use for 50 years and they are still in good condition. They perform their function very well. Eminent domain powers provide ready access to land for rights-of-way, which is the only real problem the companies have with overhead lines. Disgruntled customers cannot change their source of electric power. In short, except for the wave of public sentiment against obsolete overhead technology despoiling the remaining natural beauty of the nation, there is simply no incentive to bury transmission lines other than in cities where overhead right-of-way costs are prohibitive. Granting federal eminent domain powers would make the companies even more immune to public sentiment.

It seems likely that the taxpayers will have to pay for burying existing overhead lines. The public is going to be reluctant to do this while new overhead lines are not only being permitted but encouraged. The time to cease building overhead lines is now. Otherwise there will be a tremendous duplication of effort and expense.

OHIO VALLEY ELECTRIC CORP.,
August 11, 1966.

Re Committee on Commerce hearings on bills S. 1472, S, 2139, and S. 2140 to amend the Federal Power Act to cover certification of high-voltage transmission lines by FPC.

Hon. FRANK J. LAUSCHE,
U.S. Senate, Washington, D.C.

DEAR SENATOR LAUSCHE: It has been brought to my attention that during the testimony by Mr. Philip H. Hartung on July 20, 1966, you questioned him as to whether the coal supply for the new Keystone Plant would be deep mine or strip mined coal. When Mr. Hartung stated that he believes strip coal would amount to less than 5 per cent, you stated, "I hope that is true with your pool. It has not been true with the pool in Ohio, down at Kyger Creek on the Ohio river. The land has been butchered by them, some effort has been made but it was not adequate to restore the coverage of the land."

Kyger Creek generating station is owned, as you know, by the Ohio Valley Electric Corporation, the sole supplier of power to the great Atomic Energy Commission gaseous diffusion plant at its Portmouth Project.

All of the coal burned at the Kyger Creek station is deep mined, about one-half coming from a deep mine near Powhatan Point, Ohio, on the Ohio river, and the remainder from a deep mine in West Virginia along the Monongahela river. Over the years there has been strip mining in the vicinity of the Kyger Creek station by people having no connection with OVEC, and none of this coal has been used at this station.

The policies which OVEC follows contemplate that there may exist many conditions under which it is in the interest of the people of any of our states, if they have coal resources, to have these developed by strip mining. But OVEC also recognizes that it is never good social-economics or good public policy to have the land of any area butchered in the process of mining any available coal.

Since it is clear that OVEC has no connection with any butchering of land directly or indirectly, I would appreciate it if in justice to my company you would make clear on the public record of the hearings that the allusions to OVEC in your remarks were based on mistaken identity of the interests responsible for the disreputable condition in which the land was left.

With my best regards, I am,

Sincerely yours,

PHILIP SPORN.

THE CONNECTICUT LIGHT & POWER CO.,
Berlin, Conn., August 31, 1966.

Hon. WARREN G. MAGNUSON,
Chairman, Senate Committee on Commerce,
New Senate Office Building, Washington, D.C.

DEAR SENATOR MAGNUSON: I am opposed to the enactment of Bills S. 1472, S. 2139 or S. 2140 which propose extending the scope of authority granted the Federal Power Commission to include certain extra-high-voltage electric transmission lines.

My reasons for opposition are as follows:

1. The proposed legislation is unnecessary in view of the demonstrated readiness of the power industry to investigate, recognize and adopt all practical technological improvements of assistance to its objective of adequately and economically meeting electric power requirements of its customers. A pertinent illustration is the interconnected-system method of operation which is long-established and successful. My own Company, for example, was operating on an interconnected basis as far back as the mid-1920's.

2. The legislation purports to encourage the construction and extension of underground lines, whereas, in reality, regulations and requirements in the bills, of their very nature, will create undue delays and restraints on proposed installations.

3. Not the least important, in my opinion, is the fact that the bills would remove from the managements of the power industry the right to exercise their own business judgment in deciding, from the standpoints of economics, aesthetics and service reliability, whether and where underground lines should be located. I believe that this infringement on a basic responsibility of management has not been proven necessary.

4. The recognized superiority of the United States power system over that of any other nation, clearly indicates that the public interest will be served best by continued reliance on voluntary action and cooperation among all segments of the industry.

I hope the membership of the Committee will give the most serious consideration to the many sound objections to the passage of this legislation.

Sincerely,

A. E. WALLACE,
Executive Vice President.