Section) to the National Council on the Arts will be held on August 28–29, 1995 from 9 a.m. to 5 p.m. This meeting will be held in Room 730, at the Navy Hanks Center, 1100 Pennsylvania Avenue NW., Washington, DC 20506.

This meeting will be open to the public on a space available basis.

Any interested person may observe meetings or portions thereof, which are open to the public, and may be permitted to participate in the discussions at the discretion of the meeting chairman and with the approval of the full-time Federal employee in attendance.

If you need special accommodations due to a disability, please contact the Office of Special Constituencies, National Endowment for the Arts, 1100 Pennsylvania Avenue NW., Washington, DC 20506, 202/682–5532, TYY/TDD 202/682–5496, at least seven (7) days prior to the meeting.

Further information with reference to this meeting can be obtained from Ms. Yvonne Sabine, Advisory Committee Management Office, National Endowment for the Arts, Washington, DC 20506, or call (202) 682–5433.

Dated: August 3, 1995.

Yvonne M. Sabine,

Director, Council & Panel Operations, National Endowment for the Arts.

[FR Doc. 95–19518 Filed 8–7–95; 8:45 am]

BILLING CODE 7537–01–M

NUCLEAR REGULATORY COMMISSION

[Docket No. 50–160]

Georgia Institute of Technology (Georgia Tech) Georgia Tech Research Reactor; Issuance of Partial Director's Decision Under 10 CFR 2.206

Notice is hereby given that the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission (NRC) has issued a Partial Director's Decision Under 10 CFR 2.206 regarding the Georgia Tech Research Reactor in response to a Petition received from Ms. Pamela Blockey-O'Brien (Petitioner), dated October 23, 1994. The Partial Director's Decision also considered subsequent letters from the Petitioner dated November 12, and December 4, 1994, February 21, February 23, March 6, March 28, April 19, May 18, June 27, and July 18, 1995.

On October 23, 1994, the Petitioner requested (1) the shutdown and decontamination of the Georgia Institute of Technology (Georgia Tech) Research Reactor, (2) the revocation of liquid radioactive material release authority to all licensees, (3) the revocation of licenses that use the principle of as low as reasonably achievable, (4) the termination of transportation of radioactive material by mail, and (5) the modification to posting requirements for radioactive material. With regard to request (1), the enclosed Partial Director's Decision addressed the Petitioner's issues which are not currently being considered as part of a license renewal proceeding. The remaining Petitioner's issues relating to request (1) will be addressed under separate cover upon completion of the ongoing adjudicatory proceedings and NRC staff review. The Partial Director's Decision also addresses requests (2) through (5). The Director of the Office of Nuclear Reactor Regulation found that the Petitioner's concerns, addressed to date, do not raise a substantial health and safety concern warranting the requested actions. The reasons for this denial are explained in the ''Partial Director's Decision Under 10 CFR 2.206'' (DD–95–15), the complete text of which follows this notice, and which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC.

A copy of this Partial Director's Decision will be filed with the Secretary of the Commission for review in accordance with 10 CFR 2.206(c). As provided in that regulation, the Decision will constitute the final action of the Commission 25 days after the date of the issuance of the Decision, unless the Commission, on its own motion, institutes a review of the Decision within that time.

Dated at Rockville, Maryland, this 31st day of July 1995.

For the Nuclear Regulatory Commission.

Frank J. Miraglia,

Acting Director, Office of Nuclear Reactor Regulation.

Appendix

Partial Director's Decision Under 10 CFR 2.206

I. Introduction

On October 23, 1994, Ms. Pamela Blockey-O'Brien (the Petitioner) filed a Petition with the U.S. Nuclear Regulatory Commission (NRC) staff pursuant to 10 CFR 2.206, that requested that the NRC staff revoke the license of the Georgia Institute of Technology (Georgia Tech) Research Reactor, shut down this research reactor and its support facilities, and remove all radioactive material and contamination offsite to a government created ''National Sacrifice [A]rea'' such as the Savannah River or Oak Ridge facilities. In addition, the Petitioner requested that the NRC staff withdraw all license authority nationwide involving the discharging or dumping of any quantity of radioactive material to all the sewers or waters in the United States or oceans of the world, and withdraw all licenses to all nuclear facilities, including nuclear power plants (NPPs), which operate under as low as reasonably achievable (ALARA) principles. Finally, the Petitioner requested both that the NRC staff modify every license issued to transporters of radioactive materials and builders of NPPs so that these parties must put two foot high letters on everything transported or built stating ''DANGER–RADIOACTIVE'' and in smaller letters ''there is no safe level of radiation, any exposure can [a]ffect health,'' and prohibit the transportation of radioactive material by mail. The NRC staff received additional letters dated November 12, December 4, 1994, February 21, February 23, March 6, March 28, April 19, May 18, June 27, and July 18, 1995, from the Petitioner and also considered these letters in this Partial Director's Decision. All letters related to this Petition have been placed in the Public Document Room and docketed under the Georgia Tech Research Reactor Docket No. 50–160, in accordance with NRC Management Directive 8.11, ''Review Process for 10 CFR 2.206 Petitions.''

As bases for the request to shut down and decontaminate the Georgia Tech Research Reactor, the Petitioner asserted that (1) a water flume comes out of the ground ''destabilizing the reactor and the ground in some way;'' (2) ''(r)adiation levels in soil and vegetation climb markedly in GA EPD documents'' around the Georgia Tech Research Reactor; (3) there is no record of air monitoring ever having been done; (4) heavy rainfall causes water to back up in the sewer and drainage lines causing flooding of the reactor parking lot and campus, as well as causing sinkholes, ''puff-ups'' on campus ground, and welded-shut manhole covers to be blown off; (5) radioactive contaminants have been routinely discharged into the sanitary sewer from the Georgia Tech Research Reactor's waste water holding tank and contamination spread by backup of the sewage system; (6) should the Georgia Tech Research Reactor be further destabilized, the reactor and the tank holding cobalt-60 could ''break apart,'' causing radioactive contaminants to ''drain into groundwater/down sewers/into the runoff ditch;'' (7) the Georgia Tech Research Reactor is in an earthquake

zone; (8) there is absolutely no reason to keep the Georgia Tech Research Reactor operating; (9) security at the Georgia Tech Research Reactor is extremely lax; and (10) in case of an accident or terrorist attack, evacuation of the campus and downtown Atlanta would be impossible both now and during the Olympics.[1]

As the bases for the request to withdraw all license authority nationwide involving the discharging or dumping of any quantity of radioactive material to all the sewers or waters in the United States, to withdraw all licenses for all nuclear facilities, including NPPs, which operate under ALARA principles, and to change labeling requirements for radioactive material, the Petitioner asserted that there is no safe level of radiation, that storage and disposal of radioactive waste is inadequate, and that the NRC's new sewage dumping guidelines are totally inadequate. The Petitioner also asserted that the request to restrict mailing of radioactive materials relates to the occurrence of transportation accidents.

II. Discussion

A. Revocation of Georgia Tech Research Reactor License

The following discussion relates to the request that the NRC staff revoke the license of the Georgia Tech Research Reactor, shut down this research reactor and its support facilities, and remove all radioactive materials and contamination offsite. This Partial Director's Decision addresses NRC licensed activities.[2]

(1) A water flume comes out of the ground ''destabilizing the reactor and the ground in some way.'' The Petitioner stated that ''(d)etailed maps show that a water flume comes out of the ground directly next to and west of the reactor.'' On request, the Petitioner identified the ''detailed maps'' as City of Atlanta, Department of Public Works (DPW) Sheets I–11 and H–11, which show ''flumes'' or ''storm drain inventory.''

The NRC staff reviewed these drawings. Drawing I–11 did not show a flume indication. Drawing H–11 does indicate a ''flume'' to the west of the Georgia Tech Research Reactor. The NRC staff discussed this drawing and indication of a ''flume'' with DPW, the agency responsible for the sewer system and the drawings. The DPW indicated that the word ''flume'' in the drawing means a surface drainage path. Physical onsite examination of this location showed a surface drainage path consisting of a concrete lined channel extending along the back retaining wall of the Georgia Tech Research Reactor facility site, approximately where the ''flume'' was indicated on the drawing.

Furthermore, physical examination of the Georgia Tech Research Reactor facility and site have found no evidence of an underground water flume or destabilization of the Georgia Tech Research Reactor facility or ground. Additional factors related to stability of the Georgia Tech Research Reactor are addressed under issues (4), (6), and (7).

The NRC staff finds no reason to conclude that there is an underground water flume destabilizing the Georgia Tech Research Reactor and surrounding ground. The Petitioner provided no facts to conclude otherwise. Therefore, the NRC staff concludes that the Petitioner's concerns do not present a substantial health or safety issue warranting the action requested by the Petitioner.

(2) ''Radiation levels in soil and vegetation climb markedly in GA EPD documents'' around the reactor. The State of Georgia (GA) Environmental Protection Division (EPD) provided the NRC staff with its environmental radiation monitoring results as compiled on November 23, 1994. These results included data from environmental monitoring for radioactivity with thermoluminescent dosimeters (TLDs), and from soil and vegetation sampling around the Georgia Tech Research Reactor.

The NRC staff discussed the results with EPD. EPD stated that its monitoring found no evidence of release of radioactive material from the Georgia Tech Research Reactor. EPD further indicated that the values and variations in monitored radiation exposures and concentrations were typical of environmental monitoring results and showed no increasing trend.

The NRC staff has concluded based on the types, quantities and relative concentrations of the isotopes measured by EPD that they are not from the Georgia Tech Research Reactor. Some of the isotopes measured by EPD are naturally occurring. Specifically, beryllium-7 is from reactions of cosmic rays with air, potassium-40 is from primordial sources, radium-226 is from the decay of naturally occurring uranium-238, and radium-228 is from decay of naturally occurring thorium-232.[3] Additionally, radiation monitoring of effluents from the Georgia Tech Research Reactor and of areas within the research reactor containment by Georgia Tech, as required by the Technical Specifications 3.2.a and 3.5.b, provided further evidence that the measurements by EPD of other isotopes (i.e., cesium-137, cerium-141, cerium-144, ruthenium-103, zirconium-95, and niobium-95) were not from the Georgia Tech Research Reactor. Rather, EPD indicated that the radioisotopes were from other sources, such as fallout from nuclear weapons testing around the world. Furthermore, as measured by EPD, there is no indication of other radioisotopes, which would be expected if the radioactivity were from the Georgia Tech Research Reactor.

The conclusion, that there is no evidence that the release of radioactive material from the Georgia Tech Research Reactor has contributed to the monitored radiation levels in the soil and vegetation, is also corroborated by the Georgia Tech environmental monitoring program. This environmental monitoring program has used film badges, and currently uses TLDs, at various locations around the Georgia Tech Research Reactor. The film badges were provided by a National Voluntary Laboratory Accreditation Program certified vendor. The TLDs meet American National Standards Institute Standards. One monitored location in the Georgia Tech Research Reactor stack measured the direct radiation for airborne releases from operation of the Georgia Tech Research Reactor. This monitor has indicated airborne effluent releases generally below detectable levels and always well below the limits of 10 CFR part 20, ''Standards for Protection Against Radiation,'' as verified most recently in NRC staff Inspection Report Nos. 50–160/95–01, 50–160/94–02, and 50–160/93–02[4]. These results are consistent with the EPD data and further confirmed the conclusions of the State of Georgia EPD that its monitoring

[1] Issue (8) includes concerns that substantial management deficiencies persist. Issue (9) involves concerns on general security and, particularly, security during the period of the 1996 Olympics. Issue (10) includes concerns on evacuation in case of a terrorist attack. Since these concerns are the subject of an ongoing license renewal proceeding before an Atomic Safety and Licensing Board, these concerns will be addressed in a Final Director's Decision at an appropriate time after considering the decisions reached in the license renewal process. All other issues related to this 2.206 Petition were considered in this Partial Director's Decision.

[2] The 10 CFR 2.206 Petition included some mention of the cobalt-60 irradiation facility which is not licensed by the NRC and is, therefore, not covered in this discussion except as it may affect research reactor safety. The 2.206 Petition and this Partial Director's Decision have been transmitted to the State of Georgia, the licensing authority for the cobalt-60 facility and for other state licensed material also mentioned in the Petition.

[3] Kathren, R. L., ''Radioactivity in the Environment: Sources, Distribution, and Surveillance.''

[4] These, and the other inspection reports referenced in this Partial Director's Decision are available from the NRC's Public Document Room, the Gelman Building, 2120 L Street, NW, Washington, DC 20037.

found no evidence of release of radioactive material from the Georgia Tech Research Reactor which has contributed to the monitored radiation levels in soil and vegetation.

The NRC staff evaluation of the data confirmed the EPD conclusion that the EPD data showed no increasing trend in radiation levels around the Georgia Tech Research Reactor. The values and variations of all monitored locations around the Georgia Tech Research Reactor were typical of environmental monitoring results at other locations, were attributable to non-reactor sources, and showed no record of an increasing trend. Further corroboration of this conclusion was provided in the discussion addressing issues (3) and (5) in this Partial Director's Decision in that releases of radioactive isotopes from the Georgia Tech Research Reactor are well within NRC regulatory limits and do not correspond to the radioisotopes found in the soil or vegetation samples.

The NRC staff finds no reason to conclude that the Georgia Tech Research Reactor is contributing to radiation levels in soil or vegetation. The Petitioner provided no facts to conclude otherwise. Therefore, the NRC staff concludes that the Petitioner's concern does not present a substantial health or safety issue warranting the action requested by the Petitioner.

(3) There is no record of air monitoring ever having been done. The Petitioner asserted that monitoring for airborne radioactive releases from the Georgia Tech Research Reactor is inadequate. However, in addition to the environmental monitoring programs previously discussed, the Georgia Tech Research Reactor is required by its Technical Specifications 3.2.a and 3.5.b to monitor and restrict radioactive releases, including airborne releases. The monitoring system includes instruments to monitor gaseous and particulate radioactivity and to initiate safety related functions (e.g., containment isolation). All radioactive releases are required to be within the limits established in 10 CFR Part 20. NRC staff inspections, as documented most recently in Inspection Report Nos. 50–160/95–01, 50–160/94–02, and 50–160/93–02 related to the Georgia Tech Research Reactor, have found that the effluent releases have been within 10 CFR Part 20 limits. Therefore, there is neither a technical need nor a regulatory requirement for additional monitoring of air samples outside the Georgia Tech Research Reactor, since all releases are controlled, as required by Technical Specifications and in accordance with NRC regulations.

The Petitioner also raised a concern related to the storage of waste at the Georgia Tech Research Reactor. The concern is that there is a large amount of waste material stored at the facility and this storage is generally unsafe. Inspection Report Nos. 50–160/95–01, 50–160/94–02, and 50–160/93–02 have verified that storage of radioactive waste has been maintained in accordance with applicable regulatory requirements (10 CFR part 20) at the Georgia Tech Research Reactor.

The Petitioner also raised concerns about various health effects around the Atlanta area and in other localities (e.g., around the Three Mile Island nuclear power plant near Harrisburg, Pennsylvania), but did not provide correlation to conditions related to the Georgia Tech Research Reactor. Therefore, the Petitioner did not provide bases for further action based on these concerns. Further, the data and information from EPD, the licensee, the Oak Ridge Institute for Science and Education (ORISE) and the Idaho National Engineering Laboratory (INEL), as evaluated by the NRC staff in this issue and on issues (2) and (5), indicate little potential for the Georgia Tech Research Reactor to have contributed to such health effects.

The NRC staff finds no reason to conclude that the Georgia Tech Research Reactor radiation monitoring program is unacceptable. The Petitioner provided no facts to conclude otherwise or bases to conclude that additional monitoring should be required. Therefore, the NRC staff concludes that the Petitioner's concern does not present a substantial health or safety issue warranting the action requested by the Petitioner.

(4) Heavy rainfall causes water to back up in the sewer and drainage lines causing flooding of the reactor parking lot and campus, as well as causing sinkholes, ''puff-ups'' on campus ground, and welded-shut manhole covers to be blown off. The Petitioner indicated that a major sinkhole of the Orme Street line (a major sewer line in the area) caused a backup and flooding in 1993 on the Georgia Tech Campus at the North parking lot at the Georgia Tech Research Reactor facility site. This flooding had no effect on the Georgia Tech Research Reactor, since the research reactor structures, systems and components are isolated from the sewer by a series of valves. Further, the containment steel-reinforced concrete floor is approximately 8 feet thick.[5] This structure supports containment internals and provides weight to protect against the buoyancy of ground water. The structure is designed to withstand the effects of buoyancy due to ground water which has been found on test borings at levels ranging from 11 to 40 feet.[6] Further, DPW stated that the work that is being done on the Orme Street line and related construction activities minimize the potential for such future flooding or other problems associated to that line.

As also indicated by the Petitioner, there is a 72 inch diameter storm drain/sanitary sewer line that could be a potential source of flooding or a sinkhole near the Georgia Tech Research Reactor. This sewer line is approximately 100 feet from the containment.[7] By letter,[8] DPW confirmed that the line had been inspected to ensure integrity and was found in ''very good condition'' on a May 24, 1994, walk-through. The DPW was ''not aware of any problems with this storm sewer'' and did not ''anticipate any problem with the maintenance or operation of this sewer in the foreseeable future.'' This conclusion was reverified with DPW, including consideration of the construction (e.g., blocks and concrete pipe) and configuration (e.g., on old drainage paths) of the sewer. DPW also indicated that this drain line is considered to be a private sewer and is not part of the City system, although DPW also indicated that they have been involved in the inspection and maintenance of such lines and there is no plan to discontinue that practice.

The Petitioner raised related issues on the structural capability of the foundation bearing material and water intrusion around the containment foundation potentially causing destabilization of the structure. This concern referenced three Georgia Geologic Survey documents.[9] The Georgia Geologic Survey was requested to evaluate the Petitioner's references to these reports with respect to the geology and seismology related to the Georgia

[5] ''Safety Analysis Report for the 5 MW Georgia Tech Research Reactor,'' Georgia Institute of Technology, Atlanta, Georgia 30332–0425, April 1994 (hereinafter SAR), Section 4.3, *Description of Reactor Containment Building*, page 43.

[6] SAR, Section 2.3, *Hydrology and Geology*, page 23.

[7] SAR, Figure 4.3, page 30.

[8] Letter dated January 9, 1995, from L. Chambers of the Department of Public Works for the City of Atlanta to R. Karam of Georgia Tech.

[9] ''Geology of the Greater Atlanta Area'' McConnell and Abrams, Georgia Geologic Survey Bulletin 96, ''Groundwater in the Greater Atlanta Region'' by Cressler, Thurmond and Hester, Georgia Geologic Survey, Bulletin Information Circular 63 and ''Geology and Groundwater Resources of the Atlanta Area, Georgia,'' Herrick and Legrand, Georgia Geological Survey Bulletin 55.

Tech Research Reactor. By letter dated May 11, 1995, the State Geologist responded to the NRC staff.[10] The letter stated, in part, that:

I have reviewed the letters from a petition to shut down the Georgia Tech Research Reactor. The letters suggest (1) that the reactor overlies the Wahoo Creek Formation, which is not a suitable nor a stable foundation material; (2) that there is an earthquake risk, particularly from the Brevard Zone; (3) that unique geologic fractures, particularly horizontal fractures, might cause large quantities of ground water to seep into the reactor and cause problems. My review indicates that the petition's suggestions are specious.

The Wahoo Creek formation is one of many geologic formations of the Piedmont Physiographic Province. The fact that the Wahoo Creek Formation weathers into ''slabs'' is not relevant; in situ, it is a competent rock adequate to provide suitable foundation for the reactor. Comparison of the foundation characteristics of weathered and in situ rock material is not reasonable nor appropriate.

Georgia is a relatively aseismic state and earthquakes are rare. The Brevard Zone should not be considered as an ''earthquake fault''.

The proximity of the Brevard Zone to the reactor is not relevant. Fractured rock, which is ubiquitous to the Piedmont, underlies the reactor. There are no data to suggest that horizontal fractures having high water yielding characteristics underlie or are even near the reactor. From a hydrogeological point of view, there are no known unique features of the reactor site to suggest that ground water would affect reactor safety.

The Piedmont extends from Alabama to New Jersey and occupies many tens of thousands of square miles. The comments made in the petition would apply at virtually any location in the Piedmont. In addition, the petition cites several reports published by the Geologic Survey Branch of The Georgia Environmental Protection Division. The reports cited were prepared under my direction; I personally reviewed and approved them. There are no data in these reports that indicate the reactor at Georgia Tech is not safe or poses an environmental threat.

These findings confirm the NRC staff geologic and seismic conclusions presented in issue (7), and further support the related data and design for the Georgia Tech Research Reactor as discussed under this issue. These findings confirm that further analysis or testing is not needed for hydrogeological conditions at the Georgia Tech Research Reactor.

The Petitioner also indicated that ''* * * a sinkhole appeared next to the reactor years ago and was filled in. A [w]itness to that is still very much alive.'' The Petitioner provided the NRC staff with information to contact the witness. This individual said that while he and two other individuals were walking from the facility, one of the individuals fell into a sinkhole to the armpits or so, and the two other individuals helped him get out. This individual also stated that the sinkhole was near the waste storage tank facility and that the time frame was somewhere between the late 1960s and middle 1970s. The area near the waste storage tank facility was physically examined while going over the area on foot at about 3 feet intervals. No sinkhole was observed.

In addition, the NRC staff questioned several members of the Georgia Tech Research Reactor staff. One of these Georgia Tech Research Reactor staff members recalled the sinkhole referred to by the Petitioner. However, none of the questioned Georgia Tech staff members recalled any other sinkholes at the research reactor facility. This was further confirmed by discussions with selected NRC staff members with experience related to the Georgia Tech Research Reactor. These NRC staff members were not aware of any sinkholes at the facility other than the one of concern to the Petitioner.

Additionally, drawings of the research reactor site[11] and physical examination of the research reactor facility and site showed no major drainage paths (other than the 72 inch storm drain line previously discussed) that could impact the Georgia Tech Research Reactor.

Construction drawings and records[12] were also reviewed and selected portions of the installation examined by the NRC staff to determine the vulnerability of the foundation structure for the Georgia Tech Research Reactor to the phenomena that were raised in the Petition. The drawings showed the bottom of the Georgia Tech Research Reactor containment building steel shell about 25 feet below finished grade. The drawings indicated that the Georgia Tech Research Reactor containment building is anchored by bolts to a steel-reinforced concrete pad about 1 foot thick and to a ring foundation that extends approximately another 12 feet down under the concrete pad. Further, examination of selected portions of the foundation and containment structure found the structure consistent with the construction and drawing details. Construction test boring records also showed that the pad and ring foundation rest on material that meets or exceeds construction specifications for safe bearing capacity. The construction test boring records showed the material at the bottom of the foundation ring to be moderately hard to hard gray gneiss. As previously discussed in issue (4) and in this issue, no information has been provided by the Petitioner or is known to the NRC staff to suggest that this foundation and support structure are not as designed or are not acceptable.

Sinkholes develop in soils or in limestone as solution cavities. Although sinkholes could develop in the soil fill material surrounding the Georgia Tech Research Reactor facility, there is no credible source for sinkhole development. Sinkholes cannot develop in or significantly affect gneiss such as that on which the Georgia Tech Research Reactor foundation is built. Therefore, the development of sinkholes near or underneath the Georgia Tech Research Reactor is not a credible event.

Even in the unlikely event of failures of the 72 inch storm drain line or the Orme Street line previously mentioned, erosion or sinkhole effects could not be expected to affect the Georgia Tech Research Reactor, since the lines are far from the research reactor containment relative to these potential effects, and the design of the reactor facility is such that it would not be impacted by such phenomena. The 72 inch storm drain is about 100 feet from the reactor containment and passes below the northwest corner of the laboratory and office building which is adjacent to the containment building. The footings for the office building, which measures approximately 90 by 130 feet, were founded on the partially weathered rock. Assuming the 72 inch line did collapse where it passes under the building, approximately a 20 feet square section of the northwest corner of the building could be affected. This section of the building houses laboratories, offices, and storage areas. Radioactive materials are not stored in this area. The remaining portion of the facility, particularly the research reactor containment building, would not be affected because of the design characteristics of the foundation and support material as previously discussed.

DPW verified that the Orme Street line is 10 to 12 feet in diameter and is about 1200 feet from the Georgia Tech Research Reactor. The sinkhole that resulted from the failure of the Orme Street line was a sinkhole approximately 50 feet in radius, which is at the upper limit of sinkhole size in the Atlanta area based on DPW experience. Based on this experience

[10] Letter from William H. McLemore, State Geologist, Georgia Department of Natural Resources, to Marvin M. Mendonca, NRC Staff, May 11, 1995.

[11] SAR, Figures 4.2 and 4.3, pages 29 and 30.

[12] Letter from R. A. Karam, Georgia Tech, to D. M. Collins, U.S.N.R.C., dated October 22, 1993.

(which is consistent with NRC staff information on such phenomena) it is not credible to consider that a sinkhole from the Orme Street line, at a distance of 1200 feet, could affect the Georgia Tech Research Reactor.

The containment foundation for the Georgia Tech Research Reactor is considered to be impervious to the effects of sinkholes as the foundation rests on relatively hard material to depths and distances well beyond the credible influence of any potential source for a sinkhole.

Puff-ups are heaves, or upward expansion, which occur when locked-in stress in soil, usually clay, exceeds the load above it. The most common occurrence of puff-ups is in regions that were overlain by glaciers and the soils beneath (till, lake beds, etc.) were over-consolidated. When the glaciers melted there was still enough material over these clays to lock-in the stress. Removal of some of this overlying material, either by erosion or excavation, allows the clays to expand. Puff-ups can occur in unglaciated regions generally soon after either erosion or excavation removes the overlying material. Research reactor construction was completed in the 1960s, and considering this time interval, occurrence of a puff-up at the facility is highly unlikely. Further, puff-ups are near surface, soil deformation phenomena. As discussed above, the relatively hard, relatively deep foundation structure and gray gneiss bearing material of the Georgia Tech Research Reactor could not be expected to be affected by the geologic phenomenon of puff-ups.

With regard to the welded manhole covers that were thrown up to 8 feet as alleged by the Petitioner by sewer backup problems, the distance from the containment to the nearest manhole cover has been verified by physical examination of the site to be greater than 50 feet. This physical examination found no other potential impact point related to the Georgia Tech Research Reactor that was closer than 50 feet. The Petitioner has neither provided nor does the NRC staff possess any information or experience which would suggest that a manhole cover could be thrown the distance and have the force necessary to damage the Georgia Tech Research Reactor. Therefore, the potential for damage to the Georgia Tech Research Reactor due to this asserted phenomenon is not credible.

Based on the above, these design features and conditions provide assurance that the Georgia Tech Research Reactor would not be adversely affected by flooding, sinkholes, ''puff-ups'' or thrown welded manhole covers. These phenomena could not be expected to affect the Georgia Tech Research Reactor given the design and configuration of the facility. Therefore, the NRC staff concludes that the Petitioner's concern does not present a substantial health or safety issue warranting the action requested by the Petitioner.

(5) Radioactive contaminants have been routinely discharged into the sanitary sewer from the Georgia Tech Research Reactor's waste water holding tank and contamination spread by backup of the sewage system.

Radioactive materials can be released to the sanitary sewer system from the Georgia Tech Research Reactor in accordance with 10 CFR 20.2003.[13] The Georgia Tech Research Reactor licensee monitors releases to the sewage system, and NRC staff inspections (e.g., Inspection Report Nos. 50–160/95–01, 50–160/94–02, and 50–160/93–02) have confirmed that the radioactive releases (primarily cobalt-60 and tritium) to the sanitary sewer have met NRC discharge limits.[14]

The Petitioner expressed a concern that the release to the sanitary sewer system could expose individuals, including sewer workers, to radiation. The releases from the Georgia Tech Research Reactor to the sanitary sewer have generally been several orders of magnitude less than NRC regulatory limits. Further, the assumption in the regulation of ingestion directly at the point of release from the campus provides considerable conservatism to ensure that individuals, such as sewer workers or other individuals, would be exposed to a lesser degree even in the event of a potential backup of the sewer system with large quantities of water.

Furthermore, in response to a request from the State of Georgia, the NRC staff had ORISE perform an independent analysis for radioisotopes in process sludge and ash samples from the City of Atlanta's R. M. Clayton sewer treatment facility. The samples were taken from the sewer treatment facility on March 13, 1995. This analysis detected naturally occurring and accelerator produced radioisotopes (used primarily for medical diagnostic and therapeutic treatments). There were no detected radioisotopes from the Georgia Tech Research Reactor. Similarly, the NRC staff had an independent analysis performed by INEL of liquid waste samples from the Georgia Tech Research Reactor. This analysis found no indication of the contamination suggested by the Petitioner (e.g., plutonium or uranium).

Georgia EPD and Georgia Tech analysis on waste water are consistent with these results. This sampling and analysis verified that a relatively small amount of radioactive material has been released from the Georgia Tech Research Reactor facility to the sanitary sewer system, and any material that has been released is well within NRC regulatory limits. These facts, and the regulatory conservatism and monitoring results, as previously discussed, establish that no further sampling of the sewer releases or system is necessary to ensure that the health and safety of the public is protected.

An issue was also raised by the Petitioner regarding the need for the Georgia Tech Research Reactor to have a sewer discharge permit from the City of Atlanta. The City of Atlanta does not deal with radiological health and safety issues over which NRC has regulatory authority (See 10 CFR 8.4). The City of Atlanta is responsible for the release of materials to the sanitary sewer system for other than radiological health and safety reasons. With regard to the concern about compliance with city ordinances, the City of Atlanta is the appropriate regulatory body to deal with the implementation of its requirements.

Since there is no evidence of the spread of unacceptable contamination from the Georgia Tech Research Reactor effluents to the sewage system, the NRC staff finds no reason to conclude that unacceptable radioactive contamination was released or could be spread by the backup of the sewage system. The Petitioner provided no facts to conclude otherwise. Therefore, the NRC staff concludes that the Petitioner's concern does not present a substantial health or safety issue warranting the action requested by the Petitioner.

(6) Should the Georgia Tech Research Reactor be further destabilized, the reactor and the tank holding cobalt-60 could ''break apart,'' causing radioactive contaminants to ''drain into groundwater/down sewers/into the runoff ditch.''[15] From the evaluations and inspections to date, there is no evidence that the Georgia Tech Research

[13] Radioactive releases to the sanitary sewer was previously permitted in accordance with 10 CFR 20.303, which was superseded by 10 CFR 20.2003 on January 1, 1994.

[14] It should also be noted that revisions to the NRC's regulations with regard to release to sewage systems are under consideration (Advanced Notice of Proposed Rulemaking, ''Disposal of Radioactive Material by Release Into Sanitary Sewer Systems,'' 59 FR 9146, February 25, 1994).

[15] ''Destabilized'' in the context of this Petition issue has been defined as some condition that would result in the uncontrolled release of radioactive material.

Reactor has been ''destabilized'' in any manner. The Georgia Tech Research Reactor is designed to reduce the likelihood and mitigate the consequences of uncontrolled releases of radiation. For example, the design and configuration features as discussed for issue (4) provides considerable assurance that the Georgia Tech Research Reactor has not and will not be ''destabilized'' due to the previously postulated concerns expressed by the Petitioner.

A recent safety evaluation of the Georgia Tech Research Reactor by the NRC staff is associated with the Order to Convert from High Enriched Uranium (HEU) to Low Enriched Uranium (LEU).[16] The associated safety evaluation considered all potential safety analyses that are effected by the change out of the fuel, including potential design basis accident scenarios. This safety evaluation was issued on the bases that the pertinent reactor design features (1) continue to acceptably ensure that the health and safety of the public is protected for the HEU fuel and (2) have also been demonstrated to be acceptable for the LEU fuel.

The Petitioner raised concerns on various structures, systems and components at the research reactor. First, the ability of the containment building steel structure at the Georgia Tech Research Reactor to control releases of radioactive material was questioned. In this regard, the containment leak rate is tested, in accordance with Technical Specification 4.3.b, for at least 2.0 pounds per square inch gauge (psig), which is the design basis pressure. Technical Specification 4.3.b requires that leakage from the containment building shall not exceed 1.0 percent of the building air volume in 24 hours at 2.0 psig over-pressure. Actual test results show that leakage is about one-half of that value. Containment building structural requirements based on expected external pressures have been estimated capable of withstanding internal pressures of at least 7.5 psig.[17] This leakage integrity, and the testing and design margin, provide assurance that radioactive materials will not be released in an uncontrolled manner from the Georgia Tech Research Reactor containment.

The design function of the shield and crane support wall to mitigate potential radiation exposures was also questioned by the Petitioner. The steel-reinforced concrete wall inside the containment extends about 34 feet above the outside ground level. A safety function of the steel-reinforced concrete wall is shielding during potential design basis accident conditions.[18] The design calculations for this shielding function have been reviewed and independently verified. This review finds that the calculations conservatively modeled radioactive source terms and containment configuration.

The Petitioner also raised an issue of a potential ''runaway chain reaction.'' The Georgia Tech Research Reactor is designed with two independent and diverse shut down systems: the reactor scram system and the top reflector drain system. These systems have significant shut down capability and have been shown, both analytically and experimentally, capable of withstanding any excess reactivity condition.[19] These analyses show that the Georgia Tech Research Reactor can meet (with substantial margin) the Technical Specification 3.1.a requirements to be shut down (i.e., subcritical by at least 1.0 percent delta k/k with both the highest reactivity worth shim-safety blade and the regulating rod fully withdrawn). Further, specific design features of the Georgia Tech Research Reactor prevent or mitigate reactivity and power increase conditions. Analyses[20] show that both the HEU and LEU fuels are designed to withstand maximum credible reactivity worth/power excursion conditions without damage, including maximum reactivity addition conditions. As indicated in SAR, this analysis technique has been verified by test data.[21] This degree of shut down capability and provisions for mitigation of design basis accidents is consistent with other U.S. research reactor designs, has been verified by data and NRC staff review, and provides assurance that the Georgia Tech Research Reactor can be safely shut down for any credible condition, including analyzed accident conditions.

The Petitioner also raised concern that a previous accident analysis assumed a fuel loading accident that was considered ''incredible'' and no analysis of this scenario was performed in the current SAR.[22] The SAR states: During refueling operations, all control elements are required to be fully inserted and the top D_2O reflector drained to storage. Following the refueling operation, the reactor startup will be accomplished with standard practice. Under these conditions, a sudden introduction of reactivity is impossible.''[23] Although the NRC staff agrees with the licensee that this accident is not credible, the NRC staff did verify that the results would be acceptable in the unlikely event of such an accident. Specifically, in the safety evaluation for the Order to Convert from HEU to LEU,[24] the NRC staff found that (1) the previous safety evaluation[25] remained valid in that the HEU fuel would not be damaged by the fuel loading accident and (2) the reactivity characteristics of the LEU compared to the HEU fuel are such that the maximum fuel temperatures of the LEU fuel would be less than the temperature for the HEU fuel during the potential fuel loading accident. Therefore, the NRC staff finds that, although the fuel loading accident analysis was not and need not be performed in the current SAR for the Georgia Tech Research Reactor, the potential results, if the analysis were to be performed in the current SAR, would remain acceptable for both fuel types.

The Petitioner also raised a concern regarding the emergency cooling capabilities at the Georgia Tech Research Reactor. The research reactor is designed with an emergency cooling system.[26] The system, as required by Technical Specification 3.7, consists of a passive tank capable of providing cooling for 30 minutes, and two separate long term supplies, only one of which is required for a total of 12 hours of cooling. (It should be noted that in the SAR the licensee assumed that (1) the long term cooling supply connections are prevented or interrupted, (2) a complete core meltdown and conservative fission product release occurred, and (3) conservative radiological exposure conditions existed. These assumptions were used in a calculation to demonstrate

[16] ''Georgia Institute of Technology, (Georgia Tech Research Reactor); Order Modifying Facility Operating License No. R–97,'' 60 FR 32516, June 22, 1995.

[17] SAR, Section 4.3.2, *Provisions for Insuring Leak-Tightness,* page 49.

[18] SAR, Section 4.3 *Description of Reactor Containment Building,* Section 4.3.1 *General Layout,* pages 42–9.

[19] SAR, Section 5.6, *Shutdown Margins.*

[20] SAR, Section 5.10, *Accident Analyses,* page 139–144.

[21] SAR, Section 5.9.1 *Comparison of Calculations with SPERT–II Experiments,* pages 137–8.

[22] SAR, Section 5.10.3 *Fuel Loading Accident.*

[23] SAR, Section 8.4.2 *Fuel Loading Accidents.*

[24] Letter from Marvin M. Mendonca, NRC, to Dr. Ratib A. Karam, Georgia Institute of Technology, ''Issuance of Order Modifying License No. R–97 to Convert from High- to Low-Enriched Uranium—Georgia Institute of Technology (TAC No. M85896),'' Enclosure 3 Safety Evaluation, Section 2.14.5 Fuel Loading Accident.

[25] U.S. Atomic Energy Commission, Safety Evaluation by the Directorate of Licensing, Docket No. 50–160, Georgia Institute of Technology, Section 6.0 *Accident Analysis,* page 12, dated December 19, 1972.

[26] SAR, Section 4.4.8.3, *Emergency Cooling System,* pages 87–90.

acceptable design bases for the Georgia Tech Research Reactor containment, that is leakage rate and shielding functions, as previously discussed.) The Petitioner's concern relates to the time required to make the manual connections to the backup water supplies and potential radiation exposures during this process. These connections are made outside the containment structure. The 30 minutes cooling period flow is designed to be provided by gravity flow from the previously mentioned passive tank through two redundant fast acting, fail safe valves. This cooling ensures no fuel damage or radiation release effect in the event of the loss of coolant accident in that 30 minute time period. The NRC staff concludes, based on a walk through with the licensee, that 30 minutes continues to be an acceptable time to make the connections. The long term emergency cooling connections could be accomplished within the 30 minute time period and there would be no increased radiation exposure while making these connections. Therefore, the previous NRC staff conclusion in licensing the Georgia Tech Research Reactor remains valid, that is, there will be acceptable emergency cooling of the core in the event of the loss of coolant accident.

The Petitioner also raised a concern on the reduction in shielding for the cobalt-60 storage pool, caused by the use of water from this storage pool to provide one of the two alternate long term water supplies for emergency cooling of the research reactor. The emergency cooling function effect on radiation levels from the cobalt-60 pool was reviewed and independently verified. This evaluation has found that the reduction in water above the cobalt-60 sources for the long term reactor emergency cooling function would not significantly affect the shielding of the cobalt-60 source, i.e., there will remain sufficient water for shielding. This was confirmed with the Georgia EPD, the licensing authority for the cobalt-60 source, and the Georgia Tech Research Reactor licensee. Therefore, the use of the cobalt-60 pool for emergency cooling of the Georgia Tech Research Reactor would not adversely impact that function or radiation safety.

The Petitioner raised a concern regarding the use of hot channel factors and engineering uncertainty factors. The SAR analyzed the fuel design to establish safety limits considering power peaking conditions (hot channel factors) and conservative fuel manufacturing tolerance (engineering uncertainty factors). Consistent with research reactor regulatory policy, the SAR verified that these safety limits would not be exceeded or even approached, so that no fuel damage would occur.[27] The NRC staff finds that these conclusions remain valid for both the current HEU fuel and for the LEU fuel as documented in the Order to convert from HEU fuel.[28]

The Petitioner also had a concern related to the reasonableness of assuming a scram after pump failures in the SAR. The SAR paragraph in question states: ''The loss of the primary D_2O pump or the secondary cooling water pump can result in undesirable reactor operating conditions. These systems are therefore provided with high temperature and low flow interlocks with the reactor scram circuitry. Of the two pump failures, the loss of the D_2O pump is the more serious. Two independent low D_2O flow scram interlocks, and loss of electrical power interlocks have been provided in the reactor safety instrumentation. It is therefore acceptable to assume that the reactor will scram because of low flow shortly after an electrical power failure or the more serious case of pump seizure.'' [29] These interlocks provide redundant and diverse scram functions for the Georgia Tech Research Reactor. The NRC staff concludes that in the unlikely event that one of the independent low D_2O flow scram interlocks were to fail or be inoperable, the other low D_2O flow scram interlock would scram the reactor. These redundant scram interlocks are required by Technical Specification 3.2.a. Additionally, the high D_2O temperature and loss of electrical power scram interlocks provide additional assurance that the reactor will scram on potential pump failure events. Based on the redundancy of the low D_2O flow scram interlocks and the additional redundancy from diverse scram interlocks such as the high D_2O temperature scram interlocks, the NRC staff concludes that it is acceptable to assume that the reactor will scram for the potential pump failure analysis.

The Petitioner also asserted that plutonium and cesium-137 were not included in the core burnout analysis. For the core burnout analysis, data show that the assumed release fractions from the fuel of isotopes in the SAR are conservative and that plutonium, cesium, or other particulate isotopes would not be released.[30] Furthermore, page 196 of the SAR states that the source term includes daughter products of the released volatile fission products, which would include cesium-137 as a daughter product of released isotopes. Based on the above quoted data and consideration of volatile fission product decay daughters, the release assumptions are acceptable.

The Petitioner also indicated that there were errors in the Georgia Tech Research Reactor SAR. These alleged errors include the following: That the half-life of iodine-131 was incorrectly specified; that the geologic data are inadequate; that population data are outdated; that the radiation exposure calculational technique and data used to estimate design basis accident radiological doses are outdated; that incorrect names were used for State of Georgia organizations; and that a 30 year wind rose was needed.

Regarding the half-life of iodine-131, there was a typographical error where 1.92 hours was typed instead of 192 hours. This has been corrected by the licensee in a January 1995 SAR revision.

The geologic data presented by the licensee in the SAR, along with other data and information that were provided by the Petitioner, DPW, the Georgia Geologic Survey and the licensee, have been evaluated and discussed by the NRC staff in issues (4) and (7) of this Partial Director's Decision. Based on these evaluations by the NRC staff, the geologic data do not change the previous staff conclusions in licensing the Georgia Tech Research Reactor and the NRC staff does not possess any information which would suggest that the geologic information for the research reactor is not acceptable.

The population data presented by the licensee were from the 1990 census rather than from current City of Atlanta or other estimates on population as stated by the Petitioner. The use of the 1990 census data are acceptable because it is the latest official U.S. census data. The use of such data as implemented in the Georgia Tech Research Reactor SAR and the Technical Specifications is consistent with reactor licensing practices for restricted area, exclusion area and low population zones.

The radiation exposure calculational technique and data used to estimate design basis accident radiological doses (SAR Appendices B and C) were reviewed and found to be conservative and therefore acceptable for use.

Regarding the use of incorrect names for State of Georgia organizations, this was a failure of the licensee to

[27] SAR, Section 5.7, *Thermal—Hydraulic Safety Parameters,* pages 127–135.

[28] Letter from Marvin M. Mendonca, NRC, to Dr. Ratib A. Karam, Georgia Institute of Technology, Enclosure 3 Safety Evaluation, Section 2.11 *Thermal-Hydraulics.*

[29] SAR, Section 8.2.2 *Pump Failures*

[30] SAR, page 196 and Reference B.1.

completely update its SAR and will be corrected in the license renewal process.

Finally, the use of a 5 year wind rose, rather than a 30 year wind rose, is not significant to the Georgia Tech Research Reactor safety analysis or emergency planning because, conservative assumptions, which are independent of the wind rose data, are used for dose assessments in the SAR.[31] In addition, the Georgia Tech emergency preparedness plan uses actual measurements, rather than wind rose assumptions, to determine necessary protective actions.[32] Also, as previously discussed in issues (2) and (3), the environmental, effluent, and area radiation monitoring for the Georgia Tech Research Reactor, provides acceptable verification of compliance to Technical Specification and 10 CFR Part 20 requirements, and further wind direction data or wind rose accuracy for environmental monitoring is not required.

The design and analysis features, as documented in the SAR and appropriately required and verified in the Technical Specifications for the Georgia Tech Research Reactor, reduce the potential for or mitigate the consequences of design basis accidents and provide acceptable assurance that there will be no uncontrolled release of radioactive material. Therefore, the NRC staff finds no reason to conclude that the radioactive contaminants would be spread by any credible event or condition at the Georgia Tech Research Reactor. The Petitioner provided no facts to conclude otherwise. Therefore, the NRC staff concludes that the Petitioner's concern does not raise a substantial health or safety issue warranting the action requested by the Petitioner.

(7) *The Georgia Tech Research Reactor is in an earthquake zone.* The NRC staff has continued to closely follow the seismic and geologic developments in the tectonic province in which the Georgia Tech Research Reactor is located. The site is located in the southeastern Piedmont, which, along with the Blue Ridge, comprises the southern portion of the broad region designated by the NRC staff as the ''New England-Piedmont Tectonic Province.'' The New England-Piedmont Province is bounded on the northwest by the Southern Valley and Ridge Tectonic Province and on the southeast by the Coastal Plain Tectonic Province.

The NRC staff has extensively reviewed the geology and seismology of this region (e.g., the Safety Analysis Reports for McGuire, Catawba, North Anna, Shearon Harris, Vogtle, and Summer Nuclear Power Plants). These studies include considerations of the New Madrid, Charleston, east Tennessee, and Brevard seismic zones that were mentioned in the Petition. These evaluations by the NRC staff, as documented in the safety evaluations for the McGuire, Catawba, North Anna, Shearon Harris, Vogtle, and Summer Nuclear Power Plants, and other, nuclear and non-nuclear-related evaluations during the last two decades, have identified no capable faults [33] in this region.

The NRC also has supported regional seismic networks in the southeast.[34] In 1990, the NRC began to transfer support from these regional networks to the National Seismic Network operated by the United States Geological Survey. The NRC staff continues to review the results from these networks, and finds no new information which would change previous conclusions on the seismicity of the southeastern Piedmont (i.e., there are no capable faults and the potential for a damaging earthquake is very remote).

Seismology has been considered in the licensing of the Georgia Tech Research Reactor. The New Madrid, Missouri and the Charleston, South Carolina earthquakes (that were mentioned in this Petition issue) were considered, as were lesser magnitude earthquakes in and near Georgia. The Petitioner has presented no new seismic information for the region. The NRC staff evaluation continues to support the conclusion that the seismology for the Georgia Tech Research Reactor has been acceptably considered in the licensing of this facility.

A study of seismic hazards has been performed for Georgia Tech and referenced in the Petition.[35] This study reviewed seismic history, performed probabilistic and deterministic seismic ground motion studies, and made estimates of potential ground motion. The report validated Standard Building Code seismic coefficient requirements for the Georgia Tech campus, and did not change the conclusion on the acceptability of the Georgia Tech Research Reactor.

The above conclusions, as previously discussed in issue (4), are further supported by the Georgia State Geologist in a letter dated May 11, 1995.

The NRC staff finds no reason to conclude that the seismic characteristics for the site are unacceptable for the Georgia Tech Research Reactor. The Petitioner provided no facts to conclude otherwise. Therefore, the NRC staff concludes that the Petitioner's concern does not raise a substantial health or safety issue warranting the action requested by the Petitioner.

(8) *There is absolutely no reason to keep the Georgia Tech Research Reactor operating.* The license for the Georgia Tech Research Reactor was issued in accordance with all applicable requirements. The licensee programs in education, research and development are consistent with the Georgia Tech Research Reactor license. Specifically, the Georgia Tech license renewal request dated April 19, 1994, discussed activities at the research reactor, including nuclear education in nuclear engineering and health physics. It also discussed contributions to the community, such as plant irradiation experiments for high school science classes and use by the Boy Scouts of America for nuclear merit badges at the Georgia Tech Research Reactor. The Georgia Tech Research Reactor has capability for bio-medical irradiation research and development, isotope production, neutron diffraction, and activation analysis. The license renewal request specified programs evaluating radiation decomposition of chemicals, characterizing neutron absorbing materials, and characterizing soil samples.

The Petitioner also raised concerns on the monitoring and calibration of neutron beams for medical therapy. At this time, the Georgia Tech Research Reactor is not authorized to conduct medical therapy,[36] so the specific concern is not applicable.

[31] SAR, Appendix B.

[32] Letter from R. A. Karam, Georgia Tech, to U.S. Nuclear Regulatory Commission, dated April 19, 1994, Attachment 6, Emergency Preparedness Plan.

[33] Capable faults are defined in 10 CFR Part 100, ''Seismic and Geologic Siting Criteria for Nuclear Power Plants,'' Appendix A, Section III ''Definitions.''

[34] These Networks include, the Charleston network, first operated in 1973 by the U.S. Geological Survey (USGS). Others were added during the mid and late 1970's and early 1980's, which were operated by Virginia Polytechnic and State University (Central Virginia and Giles County Seismic Zones), the University of Memphis (Southern Appalachians and New Madrid Seismic Zones), Georgia Institute of Technology (Georgia and Alabama), and St. Louis University (New Madrid Seismic Zone).

[35] ''Seismic Hazard Study for the Georgia Institute of Technology Campus, Atlanta, Georgia,'' Law Engineering Project No. 57704495.01, March 16, 1993.

[36] The Georgia Tech Research Reactor cannot perform medical therapy without specific authorization under the provisions of the Atomic Energy Act Section 104(a). Georgia Tech may perform experiments, such as the characterization of irradiation conditions for potential, future medical therapy as long as the experiments and research reactor are within the provisions of the

Continued

The Petitioner has asserted that substantial management deficiencies persist, including concerns on the problems related to the 1987/1988 time frame. This concern on the persistence of substantial management deficiencies may be addressed in the pending license renewal proceeding. As previously outlined in the Introduction to this Partial Director's Decision, the Final Director's Decision will take into account any relevant findings from this license renewal proceeding at an appropriate time after completion of the NRC staff review.

The NRC staff finds no reason at this time to conclude that the Georgia Tech Research Reactor is not continuing to conduct research and development activities in accordance with the Atomic Energy Act and NRC regulations. The Petitioner provided no facts to conclude otherwise. Therefore, the NRC staff concludes that no information has been provided on this issue to conclude that a substantial health or safety issue exists warranting the action requested by the Petitioner.

(9) *Security at the Georgia Tech Research Reactor is extremely lax.* The concerns on security issues, as previously outlined in the Introduction to this Partial Director's Decision, may be addressed in a pending license renewal proceeding. These issues will be addressed in a Final Director's Decision at an appropriate time after taking into account any relevant findings from this license renewal proceeding and after completion of the NRC staff reviews.

(10) *In case of an accident or terrorist attack, evacuation of the campus and downtown Atlanta would be impossible both now and during the Olympics.*[37] With respect to potential accident conditions for the Georgia Tech Research Reactor, the Emergency Planning Zone (EPZ), the area within which predetermined protective actions are established, is a 100 meters radius from the facility. This EPZ is in accordance with NRC emergency preparedness guidance applicable to research reactors.[38] The Georgia Tech Research Reactor accident analyses[39] demonstrates that this 100 meter EPZ is conservative for the Georgia Tech Research Reactor. These analyses have been found acceptable most recently in the safety evaluation for the Order to convert from HEU fuel.[40] These analyses demonstrate that the potential need for protective actions outside the EPZ is highly unlikely. The specification of emergency classifications (e.g., no general emergency classification) for the Georgia Tech Research Reactor has also been reviewed by the NRC staff and found to be consistent with the NUREG–0849 guidance. The Georgia Tech Research Reactor emergency plan has been previously verified by the NRC staff to be acceptable in accordance with this regulatory guidance and applicable regulations.

The Georgia Tech Research Reactor has conducted emergency response drills in accordance with its emergency plan (the last three drills were on October 19, 1994, November 4, 1993, and November 9, 1992). The drills have included involvement of onsite or offsite agencies, such as the Georgia Tech Police Department, the Atlanta Fire Department, the Atlanta/Fulton County Emergency Management Agency, the Georgia Emergency Management Agency, the Georgia Environmental Protection Division, and the Grady Memorial Hospital. Training, equipment, and contingency planning for onsite and offsite personnel have been acceptably in accordance with emergency plan requirements, as verified most recently in NRC staff Inspection Reports 50–160/94–04, 50–160/93–03, and 50–160/92–04. Police, fire, and medical personnel have been observed by NRC staff to acceptably perform their responsibilities. Other recent discussions with these emergency response organizations demonstrate that they acceptably understand and feel capable of discharging their responsibilities under emergency conditions at the Georgia Tech Research Reactor.

With regard to emergency preparedness during the Olympics,[41] the NRC staff and the licensee have been discussing the necessary steps to take for reactor safety during this event for some time before this Petition was raised. The licensee has decided to not operate the research reactor during the 1996 Olympics and to remove the spent fuel from the facility prior to the Olympics.[42] This would eliminate the potential for radiological releases during the Olympics related to the presence of such fuel onsite, and would reduce the potential for any emergency response to be taken due to radiological conditions for the Georgia Tech Research Reactor during the Olympics.

Georgia Tech has indicated that there are no events or additional resident population that are planned to be within the EPZ, and that the entire campus is to be controlled for access such that increased transient population through the EPZ is not expected. Further, supplemental emergency provisions for the Olympics are being planned by Georgia Tech in coordination with the Atlanta Committee for the Olympic Games, the U.S. Department of Defense, the Federal Bureau of Investigation, the Georgia State Patrol, Georgia Department of Transportation, City of Atlanta Police, and City of Atlanta Fire Department.

Additionally, the Petitioner in her July 18, 1995 letter, raised a concern on emergency preparedness for power reactor licenses, including emergency preparedness during the Olympics. NRC regulations require the development of emergency preparedness plans for all reactor licenses. The Petitioner presented no information and the NRC staff does not know of any information which would suggest that reactor emergency preparedness is not acceptable, including emergency preparedness during the Olympics.

The Petitioner also raised an issue addressing the location of the emergency command center within the Georgia Tech Research Reactor building. However, the emergency command center is outside the containment structure in which the Georgia Tech Research Reactor is housed. The emergency command center is isolated from the containment structure, which, as previously discussed on issue (6), is capable of withstanding pressures greater than would result from any analyzed accident. The discussions on

current license and other NRC regulatory requirements. In order to perform medical therapy at the Georgia Tech Research Reactor, an associated license under the provisions of 10 CFR 50.21(a) would be required, as well as associated modifications to the Technical Specifications from the NRC.

[37] That portion of the issue that deals with potential terrorist attacks will be included in issue (9) on security.

[38] ''Standard Review Plan for Review and Evaluation of Emergency Plans for Research and Test Reactors,'' NUREG–0849, Appendix II.

[39] SAR, Section 5.10 *Accident Analyses*, pages 139–144 and Section 8, *Reactor Hazards Evaluation*, and Appendices A, B, and C, pages 176–214.

[40] Letter from Marvin M. Mendonca, NRC, to Dr. Ratib A. Karam, Georgia Institute of Technology, Enclosure 3 Safety Evaluation, Section 2.14 *Potential Accident Scenarios.*

[41] As previously noted, the implications of terrorist acts during the Olympics relative to emergency preparedness may be addressed in a pending license renewal proceeding. These issues will be addressed in a Final Director's Decision at an appropriate time after taking into account any relevant findings from this license renewal proceeding and after completion of the NRC staff reviews.

[42] Georgia Institute of Technology's Response to Commission's Order Issuing Housekeeping Stay, dated June 21, 1995, and letter from Patricia Guilday, Assistant Attorney General, State of Georgia, Department of Law, to the Secretary of the NRC dated July 25, 1995.

the preceding issues also demonstrate that there is little likelihood that the emergency command center could be affected by a radiological event related to the Georgia Tech Research Reactor. The emergency command center is monitored for radiation so that in the unlikely event of an indication of unacceptable radiation in the emergency command center, or if it were to otherwise become unavailable, alternative actions could be taken (e.g., relocation of emergency response personnel). The above is consistent with the Georgia Tech Research Reactor emergency plan and previous NRC acceptance of the emergency plan, continues to acceptably implement the requirements of NUREG–0849, and, therefore, provides acceptable emergency preparedness for the Georgia Tech Research Reactor.

Based on the above, the 100 meter EPZ at the Georgia Tech Research Reactor is acceptable as a planning basis to ensure the protection of the public health and safety both now and during the Olympics, and the likelihood of evacuation or other protective action beyond the EPZ is acceptably low. During the Olympics, Georgia Tech's plans to not operate and to remove spent fuel ensure that there will be minimal potential of radiological related emergencies arising in connection with the NRC license for the Georgia Tech Research Reactor. Further, during the Olympics, the conditions around the research reactor, access controls to the campus, and planning for supplementary emergency provisions ensure that the provisions of the emergency plan will not be adversely affected by the Olympics.

The NRC staff finds no reason to conclude that the emergency planning zone for the Georgia Tech Research Reactor is not acceptable, including during the time period of the Olympics. The Petitioner provided no facts to conclude otherwise. Therefore, the NRC staff concludes that no information has been presented to conclude that a substantial health or safety issue exists warranting the action requested by the Petitioner.

B. Revocation of Liquid Radioactive Material Release Authority; Revocation of Licenses Using the Principle of As Low As Reasonably Achievable; Prohibition of Transportation of Radioactive Material by Mail; and Modification to Posting Requirements for Radioactive Material

The following are general requests by the Petitioner for actions related to various categories of licenses:

1. The request to withdraw all license authority nationwide involving the discharging or dumping of any quantity of radioactive material to all the sewers or waters in the United States;

2. The request to withdraw all licenses to all nuclear facilities, including nuclear power plants, which operate under as low as reasonably achievable (ALARA) principles;

3. The request that the NRC staff prohibit the transportation of radioactive material by mail; and

4. The request that the NRC staff modify every license issued to transporters of radioactive materials and builders of nuclear power plants so that these parties must put two-foot high letters on everything transported or built stating ''DANGER–RADIOACTIVE'' and in slightly smaller letters ''there is no safe level of radiation, any exposure can [a]ffect health.''

The bases for these requests are that there is no safe level of radiation, that storage and disposal of radioactive waste is inadequate, and that the NRC sewage discharge guidelines are totally inadequate. The Petitioner has also indicated that the basis for the request related to transportation by mail is that accidents have occurred while transporting radioactive materials. The issues enumerated by the Petitioner are broadly framed requests to take actions to prohibit discharging all radioactive material into sewers and waters of the U.S., to create a zero release limit of radioactive material, and to modify the transportation regulations under 10 CFR part 71.[43] The Petitioner also raises concerns over the adequacy of current NRC regulations related to radiation protection.[44] Finally, the Petitioner questions the adequacy of NRC and Environmental Protection Agency (EPA) regulations on allowed radioisotopes in the environment.

For each of the Petitioner's concerns cited directly above, the Petitioner has provided no specific information or basis which would support taking action on the Petitioner's four requests cited in this section. The Petitioner's request to withdraw all license authority for the discharging of any quantity of radioactive materials to all sewers and waters is based on a general assertion that the NRC's sewer dumping guidelines are totally inadequate. The Petitioner offers no support for this assertion. In addition, the Petitioner's stated bases for the request to withdraw all licenses which operate under ALARA principles (i.e., there is no safe level of radiation and the storage and disposal of radioactive materials, as well as the regulations, are inadequate) have not been substantiated by any data or references in the Petition. Finally, no information was provided that transportation accidents had not been evaluated and issues resolved under the provision of current regulations or that present regulations regarding the use of mail to transport radioactive material is not acceptable. Because these stated concerns are general and are not supported by additional information in the Petition, these concerns do not provide the basis for taking enforcement action under 10 CFR 2.206.

No specific information was provided to support the Petitioner's general statements on the inadequacy of NRC regulations. The Petitioner has provided no information that would lead to a conclusion that the packaging and transportation regulations in 10 CFR part 71, the radiation protection regulations in 10 CFR part 20, and the NRC's and EPA's environmental protection regulations, are not providing acceptable protection to the public health and safety, as well as to the environment. Since the Petitioner has not submitted any relevant technical, scientific or other data to support any of the general requests for the actions enumerated in this section, or raised a substantial health and safety concern based on these issues, the Petitioner's general requests for such actions are denied. However, should this Petitioner, or anyone, wish to provide relevant technical, scientific or other data and grounds to support any change to NRC regulations, a Petition for Rulemaking can be submitted in accordance with 10 CFR 2.802.

III. Conclusion

The institution of proceedings pursuant to Section 2.206 is appropriate only if substantial health and safety issues have been raised. See Consolidated Edison Co. of New York (Indian Point, Units 1, 2, and 3), CLI–75–8, 2 NRC 173, 175 (1975); Washington Public Power Supply

[43] The NRC's packaging and transportation regulations in 10 CFR part 71 are part of a broad regulatory scheme for the packaging and transportation of radioactive materials. The packaging and transportation of radioactive materials are also subject to the regulations of the U.S. Department of Transportation and the U.S. Postal Service. See 10 CFR 71.0(b).

[44] These concerns include that the release limits to the sewer systems is established as a monthly concentration and allows release of soluble material, that the brain and ovaries are not specifically mentioned in the organ dose weighting factors, that an individual is not considered a member of the public any time in which the individual receives an occupational dose, that special exposures should not be allowed, that no dose be allowed to the embryo/fetus whether the woman is declared pregnant or not, and that radiological release limits are established assuming a ''Reference Man.''

System (WPPSS Nuclear Project No. 2), DD–84–7, 19 NRC 899, 924 (1984). This is the standard that has been applied to the concerns raised by the Petitioner to determine whether the action requested by the Petitioner is warranted.

With regard to the requests made by the Petitioner discussed herein, the NRC staff finds no basis for taking such actions. Rather, as explained above, the NRC staff concludes that no substantial health and safety issues have been raised by the Petitioner. Accordingly, the Petitioner's requests for action, pursuant to Section 2.206 on the Georgia Tech Research Reactor, are denied on issues A(1) through A(8) and A(10), insofar as the issues on A(8) do not relate to the Petitioner's concerns on the persistence of substantial management deficiencies and the issues on A(10) do not relate to the Petitioner's security issues. As previously noted in the Introduction and Discussion to this Partial Director's Decision, the issue related to the persistence of management problems [part of A(8)] and the issue related to security [A(9) and part of A(10)] will be decided after taking into account the results of the licensing proceeding on the license renewal application. In addition, the Petitioner's requests on general license and authority revocation, as discussed in Section B of this Partial Director's Decision, are denied.

A copy of this Decision will be filed with the Secretary for the Commission as provided by 10 CFR 2.206(c) of the Commission's regulations. The Decision will become the final action of the Commission 25 days after issuance unless the Commission, on its own motion, institutes review of the Decision in that time.

Dated at Rockville, Maryland, this 31st day of July 1995.

For the Nuclear Regulatory Commission.

Frank J. Miraglia,

Acting Director, Office of Nuclear Reactor Regulation.

[FR Doc. 95–19510 Filed 8–7–95; 8:45 am]

BILLING CODE 7590–01–P

[Docket Nos. 50–254 and 50–265]

Exemption

In the Matter of: Commonwealth Edison Company (Quad Cities, Units 1 and 2)

I

The Commonwealth Edison Company (ComEd, the licensee) is the holder of Facility Operating License Nos. DPR–29 and DPR–30, which authorizes operation of the Quad Cities Nuclear Power Station, Units 1 and 2 (the facilities). The licenses provide, among other things, that the facilities are subject to all the rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (the Commission) now or hereafter in effect.

The facilities are boiling water reactors located at the licensee's site in Rock Island County, Illinois.

II

In 10 CFR 73.55, ''Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage,'' paragraph (a), in part, states that ''the licensee shall establish and maintain an onsite physical protection system and security organization which will have as its objective to provide high assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.''

In 10 CFR 73.55(d), ''Access Requirements,'' paragraph (1), it specifies that ''the licensee shall control all points of personnel and vehicle access into a protected area.'' Also, 10 CFR 73.55(d)(5) requires that ''A numbered picture badge identification system shall be used for all individuals who are authorized access to protected areas without escort.'' It further states that individuals not employed by the licensee (e.g., contractors) may be authorized access to protected areas without escort provided that the individual, ''receives a picture badge upon entrance into a protected area which must be returned upon exit from the protected area. * * *''

The licensee proposes to implement an alternative unescorted access system which would eliminate the need to issue and retrieve picture badges at the entrance/exit location to the protected area and would allow all individuals, including contractors, to keep their picture badges in their possession when departing the Quad Cities site.

III

Pursuant to 10 CFR 73.5, ''Specific exemptions,'' the Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security, and are otherwise in the public interest. According to 10 CFR 73.55, the Commission may authorize a licensee to provide alternative measures for protection against radiological sabotage provided the licensee demonstrates that the alternative measures have the same ''high assurance'' objective, that the proposed measures meet the general performance requirements of the regulation, and that the overall level of system performance provides protection against radiological sabotage equivalent to that which would be provided by the regulation.

Currently, unescorted access into the protected area for both employee and contractor personnel into Quad Cities, Units 1 and 2, is controlled through the use of picture badges. Positive identification of personnel which are authorized and request access into the protected area is established by security personnel making a visual comparison of the individual requesting access and that individual's picture badge. In accordance with 10 CFR 73.55(d)(5), contractor personnel are not allowed to take their picture badges off site. In addition, in accordance with the plant's physical security plan, the licensee's employees are also not allowed to take their picture badges off site.

The proposed system will require that all individuals with authorized unescorted access have the physical characteristics of their hand (hand geometry) registered with their picture badge number in a computerized access control system. Therefore, all authorized individuals must not only have their picture badge to gain access to the protected area, but must also have their hand geometry confirmed. All individuals, including contractors, who have authorized unescorted access into the protected area will be allowed to keep their picture badges in their possession when departing the Quad Cities site.

All other access processes, including search function capability and access revocation, will remain the same. A security officer responsible for access control will continue to be positioned within a bullet-resistant structure. It should also be noted that the proposed system is only for individuals with authorized unescorted access and will not be used for those individuals requiring escorts.

Sandia National Laboratories conducted testing which demonstrated that the hand geometry equipment possesses strong performance characteristics. Details of the testing performed are in the Sandia report, ''A Performance Evaluation of Biometric Identification Devices,'' SAND91—0276 UC—906 Unlimited Release, June 1991. Based on the Sandia report and the licensee's experience using the current photo picture identification system, the false acceptance rate for the proposed hand geometry system would be at least