

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, *Attention: Docketing and Services Branch*, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date. Where petitions are filed during the last 10 days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-(800) 248-5100 (in Missouri 1-(800) 342-6700). The Western Union operator should be given Datagram Identification Number N1023 and the following message addressed to Mark Reinhart: petitioner's name and telephone number, date petition was mailed, plant name, and publication date and page number of this **Federal Register** notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to William D. Johnson, Vice President and Senior Counsel, Carolina Power & Light Company, Post Office Box 1551, Raleigh, North Carolina, 27602, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a

balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

For further details with respect to this action, see the application for amendment dated April 18, 1997, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Cameron Village Regional Library, 1930 Clark Avenue, Raleigh, North Carolina 27605.

Dated at Rockville, Maryland, this 18th day of April 1997.

For the Nuclear Regulatory Commission.

**Ngoc B. Le,**

*Project Manager, Project Directorate II-1, Division of Reactor Projects—I/II, Office of Nuclear Reactor Regulation.*

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## NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-255, 50-266/301, 50-313/368, 72-5, 72-7, 72-13]

### **Consumers Power Company, Palisades Nuclear Plant, Wisconsin Electric Power Company (Point Beach Nuclear Plant, Units 1 and 2), Entergy Operations, Inc. (Arkansas Nuclear one, Units 1 and 2), Issuance of Director's Decision Under 10 CFR 2.206**

Notice is hereby given that the Director, Office of Nuclear Reactor Regulation, has issued a Director's Decision concerning a Petition dated September 30, 1996, filed by Citizens' Utility Board (Petitioner) under Section 2.206 of Title 10 of the Code of Federal Regulations (10 CFR 2.206). The Petition requested that the NRC (1) Require Wisconsin Electric Power Company to retain 24 empty and available spaces in the Point Beach Nuclear Plant spent fuel pool to accommodate retrieval of spent fuel from a VSC-24 cask, and (2) prohibit loading of VSC-24 casks until the Certificate of Compliance, the Safety Analysis Report, and the Safety Evaluation Report are amended to contain operating controls and limits to prevent hazardous conditions.

The Director of the Office of Nuclear Reactor Regulation has determined that the Petition should be denied for the reasons stated in the "Director's Decision Under 10 CFR 2.206" (DD-97-09), the complete text of which follows this notice. The decision and documents cited in the decision are available for public inspection and copying in the Commission's Public Document Room,

the Gelman Building, 2120 L Street, NW., Washington, DC.

A copy of this decision has been filed with the Secretary of the Commission for the Commission's review in accordance with 10 CFR 2.206(c). As provided therein, this 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 within that time.

Dated at Rockville, Maryland, this 17th day of April 1997.

For the Nuclear Regulatory Commission.

**Samuel J. Collins,**

*Director, Office of Nuclear Reactor Regulation.*

### **Director's Decision Under 10 CFR 2.206**

#### *I. Introduction*

On September 30, 1996, Citizens' Utility Board filed a Petition pursuant to Section 2.206 of Title 10 of the *Code of Federal Regulations* (10 CFR 2.206) requesting that the U.S. Nuclear Regulatory Commission (NRC) take the following actions:

1. Order Wisconsin Electric Power Company (WEPCO) to retain 24 empty and available spaces in the Point Beach Nuclear Plant spent fuel pool to provide the capability to permit retrieval of spent fuel from a VSC-24 cask in the event of an accident requiring removal of spent fuel from the cask or in the event that conditions of the certificate of compliance (COC) for the VSC-24 require removal of spent fuel from the cask, until such time that WEPCO has other options available to it to remove spent fuel from a cask in the event conditions warrant it; and
2. Order users of the VSC-24 cask not to load VSC-24 casks until the COC, safety analysis report (SAR), and safety evaluation report (SER) are amended to contain operating controls and limits that prevent hazardous conditions, including but not limited to the generation of explosive gases, due to VSC-24 material reactions with environments encountered during loading, storage, and unloading of the VSC-24 cask. The SAR and SER must be amended such that each operating control and limit is clearly documented and justified in the technical review sections of the SAR and associated SER as necessary and sufficient for safe cask operation.

The Petition has been referred to me pursuant to 10 CFR 2.206. The NRC letters dated October 11 and December 10, 1996, to Mr. Dennis Dums, on behalf of the Petitioner, acknowledged receipt of the Petition and provided the NRC staff's determination that the Petition did not require immediate action by the NRC. Notice of receipt was published in the **Federal Register** on December 16, 1996 (61 FR 66063).

On the basis of the NRC staff's evaluation of the issues and for the reasons given below, the Petitioner's requests are denied.

## II. Background

The Petitioner's first request is for the NRC to order WEPCO to maintain sufficient empty space in the spent fuel pool at Point Beach to accommodate the unloading of a VSC-24 spent fuel storage cask. NRC regulations include a requirement that an independent spent fuel storage installation (ISFSI) be designed to provide for the ready retrieval of spent fuel or high-level radioactive waste for further processing or disposal. This requirement is applicable to ISFSIs so that the stored spent fuel can be retrieved for transport to either a monitored retrievable storage installation (MRS) or a high-level waste repository whenever it becomes available. This regulation, 10 CFR 72.122(l), provides as follows:

(1) *Retrievability.* Storage systems must be designed to allow ready retrieval of spent fuel or high-level radioactive waste for further processing or disposal.

In addition to the regulatory requirements in Section 72.122(l) pertaining to retrieval of the fuel assemblies for further processing or disposal, there are certain events or conditions that could warrant removing a VSC-24 cask from an ISFSI and returning the multi-assembly sealed basket (MSB) to the spent fuel pool and unloading the stored fuel assemblies. The COC requires a VSC-24 cask to be returned to the spent fuel pool in response to those design basis events or conditions that may challenge the integrity of the storage cask or the cladding of the spent fuel assemblies.<sup>1</sup>

Petitioner's second request is for an NRC order to WEPCO and other users of VSC-24 casks not to load additional casks until the COC, the SAR, and the SER are amended to contain operating controls and limits to prevent hazardous conditions. On May 28, 1996, a hydrogen gas ignition occurred during the welding of the shield lid after spent fuel had been loaded into a VSC-24 cask at the Point Beach Nuclear Plant. The hydrogen was formed by a chemical reaction between a zinc-based coating (Carbo Zinc 11) and the borated water

in the spent fuel pool. Following the event, the NRC issued confirmatory action letters (CALs) to those licensees using or planning to use VSC-24 casks for the storage of spent nuclear fuel (i.e., licensees for Point Beach, Palisades, and Arkansas Nuclear One). The CALs documented the licensees' commitments not to load or unload a VSC-24 cask without resolution of material compatibility issues identified in NRC Bulletin 96-04, "Chemical, Galvanic, or Other Reactions in Spent Fuel Storage and Transportation Casks," dated July 5, 1996, and subsequent confirmation of corrective actions by the NRC. The staff has acknowledged that the event demonstrated that the SAR and related NRC review, as documented in the SER, did not adequately address the use of a zinc-based coating and its reaction with the acidic water in spent fuel pools.

The licensees using VSC-24 casks submitted to the NRC information on operating controls and limits to prevent hazardous conditions implemented in response to NRC Bulletin 96-04 and subsequent staff inquiries. The submittals from the licensees included evaluations of possible material interactions and provided descriptions of how procedures were revised. The revisions include controls for the environments that the casks encounter during use, requirements for inspections and environmental sampling, and additional precautions for various cask operations. The NRC staff has evaluated these responses for Arkansas Nuclear One (ANO) and Point Beach and, as documented in the safety evaluations dated December 3, 1996, and April 8, 1997, determined that the operating controls and limits proposed by these licensees are acceptable and satisfy regulatory requirements. By a separate letter also dated December 3, 1996, the staff informed the licensee for ANO that its corrective actions had been verified by inspections performed by the NRC staff. Shortly thereafter, the licensee initiated cask loading activities.<sup>2</sup> The NRC will perform inspections in the near future in order to verify corrective actions implemented at Point Beach.

<sup>2</sup>The NRC staff is looking into reports from licensees on the need to perform weld repairs during the welding of the shield lid into the MSBs of several VSC-24 casks. This potential problem is not related to the requested actions or supporting information cited in the Petition. The NRC staff determined that the issuance of this Director's Decision should not be delayed pending resolution of potential problems associated with the weld repairs because the weld repairs are not related to concerns presented in the Petition and the welding issue is being addressed by ongoing NRC activities. The Petitioner was informed of the welding issue and the NRC staff's decision to not include the issue in the staff's evaluation of the Petition.

The review of responses to the bulletin related to Palisades is ongoing. Cask operations at Point Beach and Palisades continue to be limited by the licensees' commitments described in CALs.

## III. Discussion

As noted, the Petition requests two actions be taken by the NRC. They are addressed below.

### Item 1: Order WEPCO To Retain 24 Spaces in the Point Beach Spent Fuel Pool

The first requested action calls for the NRC to issue an order to WEPCO to retain 24 empty and available spaces in the Point Beach spent fuel pool to provide the capability to unload a VSC-24 dry storage cask. The two basic reasons to return a cask to the spent fuel pool would be either to (1) Retrieve the fuel assemblies for further processing or disposal pursuant to 10 CFR 72.122(l) or (2) respond to an event or condition that has potentially degraded the cask or spent fuel in regard to the requirements established in the COC.

As previously discussed, 10 CFR 72.122(l) sets forth requirements pertaining to retrieval of the fuel for further processing or disposal; however, it provides no basis for the NRC to require a licensee to maintain a specified reserve capacity in the spent fuel pool. Licensees will have considerable opportunity to plan and schedule the activities associated with retrieving fuel assemblies from existing storage casks for transfer to other casks for further processing or disposal. This ability to control the activity includes either ensuring that existing spent fuel pool facilities will support the transfer or developing alternate approaches. Alternate approaches could involve, for example, making room in spent fuel pools by use of other storage or transportation casks, expanding the wet storage capacity by making changes to the spent fuel pool or other parts of the reactor facility, or development of a system for direct cask-to-cask transfer under dry conditions. Therefore, the design requirement for ready retrieval in 10 CFR 72.122(l) does not provide a basis for issuing an order as requested by the Petitioner.

Similarly, requiring the licensee to maintain space in the spent fuel pool is not necessary as a contingency for certain events or conditions for which a cask must be returned to the spent fuel pool to facilitate inspections or ensure adequate cooling of the fuel assemblies. During its reviews performed during certification of the VSC-24 design, the NRC staff confirmed that the design features of the cask provide reasonable

<sup>1</sup>The following sections of the COC include requirements for returning a VSC-24 cask to the spent fuel pool and/or unloading the cask:

Section 1.2.3, "Maximum Permissible Air Outlet Temperature";

Section 1.2.10, "Time Limit for Draining the MSB";

Section 1.2.15, "Handling Height"; and  
Section 1.3.4, "Thermal Performance."

Each section is discussed later in this decision.

assurance that the cask and fuel assemblies will confine the radioactive materials following the design basis events established for dry storage casks. These design features include the confinement function provided by the welded MSB, the cooling and shielding functions provided by the ventilated concrete cask (VCC), the limitations on the fuel to be stored, and other cask characteristics and limitations placed on its use that were relied upon during the NRC's certification of the cask. Although the NRC staff considered it prudent to require a cask to be returned to the spent fuel pool to ensure cooling of the spent fuel and support inspections to confirm that the cask could remain in service following certain design basis events, the ability of the VSC-24 casks to withstand such events made it unnecessary for the NRC to include specific time constraints in which the operation needed to be completed.<sup>3</sup>

In the event that a condition would arise requiring a cask to be returned to the spent fuel pool, the continued confinement of the radioactive materials within the MSB would afford the licensee ample time to develop corrective actions that would maintain safe storage conditions and minimize occupational exposures. The design features of the cask, the unlikely nature of events that may require unloading a cask, and the NRC staff's judgment that licensees could develop an alternate approach if a spent fuel pool could not support an immediate unloading of a cask have previously been cited as reasonable justification for not requiring licensees to maintain a fixed reserve capacity in spent fuel pools.<sup>4</sup>

Requirements defining conditions for returning a cask to the spent fuel pool were included in the COC for the VSC-24 cask in order to maintain the cask components and stored spent fuel assemblies within the boundaries evaluated and accepted by the NRC staff during the certification process. The COC addresses those events or conditions which might lead to degradation of the cask or fuel assemblies. The required actions

normally include restoring operations to within the acceptable limits or otherwise ensuring the spent fuel is placed in a safe storage condition. The COC requirements for some events or conditions include returning the MSB to the spent fuel pool to provide a safe storage condition and unloading of the spent fuel assemblies in order to support inspections of the cask.

The COC-required action in Section 1.2.10, "Time Limit for Draining the MSB," states that a cask should be returned to the spent fuel pool for cooling if the water cannot be drained within the specified time after the MSB is removed from the spent fuel pool with 24 spent fuel assemblies. The referenced draining operation is part of the cask-loading sequence and it is reasonable to assume, therefore, that the cask-loading area within or adjacent to the spent fuel pool would be available for the cask should this contingency need to be implemented. Further, the COC-required action is meant to restore cooling to maintain safety margins pertaining to fuel assembly subcriticality and can be accomplished without unloading the fuel assemblies from the MSB. It is likely, however, that the locations in the spent fuel pool that had contained the fuel assemblies loaded into the storage cask would remain available during the loading and draining of the cask.

Section 1.2.15, "Handling Height," requires fuel assemblies to be returned to the spent fuel pool, and inspections and evaluations performed for cask components in the event a loaded cask is dropped from a height greater than 18 inches. The COC prohibits handling of a loaded VCC at a height greater than 80 inches. The NRC evaluation of the MSB drop analysis concurred that drops up to 80 inches of the MSB inside the VCC can be sustained without breaching the confinement boundary, preventing removal of the spent fuel assemblies, or causing a criticality accident. However, it is deemed prudent to return the cask to the spent fuel pool to perform inspections and evaluations in the event a cask experiences a significant drop, which is considered to be a drop from a height greater than 18 inches. The requirement to perform such inspections and evaluations was, therefore, included in the COC in the event that a cask were to be dropped during movement. However, since the most likely time for a cask drop event to occur would be during movement of a newly loaded cask to the ISFSI, it is reasonable to assume that the spaces in the spent fuel pool that had contained the fuel assemblies loaded into the cask would remain available. Moreover, even

assuming for the sake of this analysis that the drop occurs when spaces might not be available in the spent fuel pool, reviews of the cask have shown that the cask and fuel will remain intact following a drop from the maximum allowable height. Because a drop from the maximum allowable height would not pose an immediate threat to the safety of the public or plant personnel, adequate time would be available for the licensee to develop and implement approaches to perform the required inspections and evaluations if spaces were not available in the spent fuel pool to support an immediate unloading of the cask. Temporary shielding, loading the affected MSB into a spare VCC, placing the affected MSB into the cask loading area within or adjacent to the spent fuel pool, or other contingency actions could ensure safe storage conditions while the licensee developed and implemented an approach to allow for the actual unloading of the cask that had been dropped.

The requirements contained in Sections 1.2.3, "Maximum Permissible Air Outlet Temperature," and 1.3.4, "Thermal Performance," were included in the COC to provide reasonable assurance that the temperatures of the fuel cladding and the VSC-24 concrete do not exceed design limits. Concrete temperature limits are intended to prevent gradual degradation of the VCC and the shielding it provides for the MSB, which is the containment vessel for the spent fuel. Other temperature limits pertain to the fuel cladding and are intended to maintain the stored fuel assemblies below the temperatures at which damage might occur. However, in the event that excessive temperatures are detected, cooling of the cask and subsequent placement of the MSB into the spent fuel pool, if necessary, are sufficient to avoid immediate safety concerns. Because safe storage of the fuel assemblies is achieved by placing the affected MSB into the cask loading area adjacent to or within the spent fuel pool, the actual unloading of the assemblies from the MSB to the storage racks within the spent fuel pool can await the licensee's development of alternative approaches if that were necessary due to a lack of storage space in the spent fuel pool. Such approaches may require the licensee to make modifications to the spent fuel pool or other parts of the reactor facility.

In addition to the specific COC requirements previously discussed, a cask might need to be returned to the spent fuel pool if the cask fails to meet some criteria provided in NRC regulations or the COC and should, therefore, be removed from service.

<sup>3</sup>The position that a time-urgent unloading of a cask need not be considered is also supported by the analysis of a hypothetical event involving the failure of the stored fuel pins with subsequent ground level breach of an MSB that was presented in the SAR for the VSC-24 design. Although no identified accident results in such failures, the event was analyzed to demonstrate the limited radiological consequences from accidents involving VSC-24 casks.

<sup>4</sup>See resolution of public comments published with rulemakings to add the VSC-24 cask (58 FR 17948) and TN-24 cask (58 FR 51762) to the list of NRC-certified casks.

Tests and surveillances performed before and after loading spent fuel into a storage cask are designed to detect failures to conform to design or regulatory requirements before a problem presents an imminent threat to the cask or stored fuel. Therefore, while discovery of a nonconformance or previously unidentified vulnerability may require removing a cask from service as part of a licensee's corrective actions, it is highly improbable that the discovery of such a condition would pose an immediate safety concern. As in the previous examples, safe storage of the spent fuel could be accomplished by returning the affected MSB to the cask loading area within or adjacent to the spent fuel pool and the MSB and spent fuel could remain there while the licensee determined an appropriate course of action, including provisions for unloading the cask, if necessary.

In sum, no credible accident has been identified that would require the immediate unloading of a storage cask as a necessary protective measure to avoid significant radiological consequences to members of the public. In addition, there is no event or condition that was identified during the certification of the VSC-24 cask that would require a time-urgent unloading of a cask. Therefore, there is no need for NRC to require continuous availability of space in the spent fuel pool to accommodate the potential need to unload a cask. Further, the NRC staff has reasonable assurance that licensees could, if necessary, develop and implement an approach to unload a cask if required to do so by unplanned events or conditions, such as those identified in the COC. If space is not immediately available in the spent fuel pool, there would be time to make it available by relocating other spent fuel assemblies or removing them for temporary storage in a cask or by making modifications to the spent fuel pool or other parts of the reactor facility. Therefore, the NRC does not see a need to require the licensee to reserve a fixed number of vacant spaces in the spent fuel pool or to maintain the capability to retrieve the spent fuel from a cask within a specified period of time, particularly when there is no such prescriptive requirement stated in NRC rules.

#### Item 2: Order VSC-24 Users Not To Load Casks Pending Amendment of Documents

The Petitioner's second request was for the NRC to order all users of the VSC-24 cask not to load VSC-24 casks until the COC, the SAR, and the SER are

amended to contain operating controls and limits that prevent hazardous conditions. As noted previously, following the event at Point Beach, the NRC staff recognized that additional evaluation of potential material interactions was warranted for all transportation and storage casks. In regard to the VSC-24 cask, the event and subsequent NRC inspections made it apparent that actual changes in the operating procedures or the design of the cask would be necessary. CALs were issued to confirm licensees' commitments to refrain from loading VSC-24 casks pending completion of the staff's review of the responses to NRC Bulletin 96-04 and verification of the associated corrective actions. As discussed, the CALs established a process by which the NRC staff could obtain confidence that operating controls and limits to address potential hazardous conditions are developed and implemented by each licensee using VSC-24 casks.

In particular, the CAL process ensures that licensees will incorporate the necessary operating controls and limits into revised plant procedures. Moreover, under existing NRC requirements, the licensee must adequately implement those revised procedures. For this reason, no changes to the COC or the SAR are needed to ensure that enforceable operating controls and limits are in place to address potential hazardous conditions during the loading or unloading of a cask. Further, as previously indicated, the staff has documented the process, information, and results of its review of the licensee's response to Bulletin 96-04 for use of the VSC-24 at ANO and Point Beach in safety evaluations available for public review. The NRC staff is currently reviewing the responses to the bulletin submitted by the licensee for Palisades.

Although the actions taken as part of the CAL process provide adequate assurance that technical and regulatory compliance issues raised by the event at Point Beach will be resolved before a licensee loads or unloads a VSC-24 cask, the NRC staff agrees with the Petitioner that it would be beneficial if the SAR and other licensing basis documents accurately described the identified chemical reaction and the associated operating controls and limits. The NRC staff is currently reviewing a proposed amendment to the SAR and the COC for the VSC-24 cask design and will ensure that the information related to the identified chemical reaction and associated operating controls is

adequately addressed in the appropriate licensing-basis document. In addition, the NRC staff is processing a petition for rulemaking, PRM-72-3, that may lead to additional updating of ISFSI SARs and the inclusion of information on operating controls and limits implemented as a result of the event at Point Beach. However, the previously discussed controls to be implemented by the licensees and verified by the NRC staff as part of the CAL process, and the enforceability of those controls under existing NRC requirements, make it unnecessary to require revision of the specific licensing documents cited by the Petitioner as a precondition for resuming cask operations at the facilities using VSC-24 casks.

#### IV. Conclusion

The Petitioner requested that the NRC (1) Require WEPCO to retain 24 empty and available spaces in the Point Beach Nuclear Plant spent fuel pool to accommodate retrieval of spent fuel from a VSC-24 cask, and (2) prohibit loading of VSC-24 casks until the COC, the SAR, and the SER are amended to contain operating controls and limits to prevent hazardous conditions. Each of the claims by the Petitioner has been reviewed. I conclude that for the reasons discussed above, no adequate basis exists for granting the Petitioner's request for either (1) Requiring the licensee for Point Beach to reserve a fixed number of vacant spaces in the spent fuel pool or (2) suspension of the licensees' use of the general license for dry cask storage of spent nuclear fuel at Palisades, Point Beach, or Arkansas Nuclear One pending revision of the SAR, the SER, and the COC for the VSC-24 cask.

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

Dated at Rockville, Maryland, this 17th day of April 1997.

For the Nuclear Regulatory Commission.

**Samuel J. Collins,**

*Director, Office of Nuclear Reactor Regulation.*

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