

February 29, 2000

Ms. Shirley Mitchell, Deputy Director  
Office of Strategic Environmental Analysis  
ATTN: B-19J  
U.S. Environmental Protection Agency, Region 5  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

SUBJECT: DAVIS-BESSE - COMMENTS ON ENVIRONMENTAL ASSESSMENT AND  
FINDING OF NO SIGNIFICANT IMPACT

Dear Ms. Mitchell:

Thank you for your letter of February 15, 2000, regarding the U.S. Nuclear Regulatory Commission's Environmental Assessment and Finding of No Significant Impact concerning the Davis-Besse Nuclear Power Station (DBNPS). The Environmental Assessment was published in the Federal Register on January 13, 2000 (65 FR 2201).

Due to the lack of a federal, long-term storage facility for spent nuclear fuel assemblies, nuclear facilities in this country have had to store an increasing number of spent fuel assemblies onsite in their spent fuel pools (SFPs). The DBNPS is currently operating with insufficient storage space in their SFP to offload their reactor vessel of 177 fuel assemblies. When the DBNPS shuts down for their Cycle 12 refueling outage in April 2000, the licensee will be required to perform a full core offload in order to perform a 10-year Inservice Inspection of the reactor vessel.

As outlined in our Environmental Assessment, on May 21, 1999, the DBNPS licensee submitted a request to temporarily store spent fuel assemblies in the cask pit, located adjacent to the SFP, in order to support the full core offload for this refueling outage. Following the refueling outage, the licensee has long-term plans to re-rack the entire SFP with high density storage racks. When the re-racking is complete, there will no longer be any rack modules or fuel stored in the cask pit area.

Your letter provided the following comments regarding our Environmental Assessment:

Comment 1: With regard to the licensee's proposal to store 289 spent fuel assemblies in the cask pit area adjacent to the SFP, our Agency is assuming that the cask pit is an air-cooled area within the containment structure. Please confirm this assumption. If our assumption is correct, please also indicate whether emanations will be higher in this area than from the SFP.

Response: The SFP and the cask pit are not located within the containment structure. The SFP and cask pit, which are adjacent to each other, are both located within the Auxiliary Building. While ventilation systems within the Auxiliary Building provide localized heating and air conditioning, the cask pit is not air cooled. Water within

the combined SFP and cask pit is cooled by a highly reliable, high quality, forced cooling water system.

The cask pit is subject to the same environmental controls as the SFP. Water surrounding fuel assemblies in the cask pit is expected to provide adequate shielding for plant personnel. Routine radiation surveys will be conducted to monitor dose rates in rooms adjacent to the cask pit when fuel is transferred to the racks in the cask pit. The staff does not expect any measurable differences in radiation emanating from the cask pit and SFP areas.

Comment 2: With regard to the licensee's long-term plans, our Agency assumes that storage of spent fuel assemblies in the cask pit will be a temporary measure and that fuel assemblies will be relocated back to the SFP. Please confirm this assumption. If our assumption is correct, please indicate how long the spent fuel assemblies will be stored in the cask pit.

Response: The cask pit will only provide temporary storage for spent fuel assemblies. The licensee plans to begin moving spent fuel assemblies in the cask pit in March 2000. Following the refueling outage for Cycle 12 (scheduled to begin in April 2000), the licensee has long-term plans to re-rack the SFP with high density fuel racks.

The staff expects that fuel will be stored in the cask pit area from March 2000 to the completion of the SFP re-racking effort which is scheduled for completion in mid-2002. The staff does not anticipate that fuel will be stored in the cask pit area once the re-racking of the SFP is complete.

Comment 3: With regard to the small percentage of fission gases released to the reactor coolant from the small number of fuel assemblies that are expected to develop leaks during reactor operation, our Agency is requesting information on whether the terms "small percentage," and "the small number" can be quantified in terms of numbers. In the event that all fuel will eventually be re-racked and placed in the SFP, our Agency also requests information on whether this will have an impact on the heat load, and whether there will be an increase in the evaporation rate at that time.

Response: While the staff requires that any release of radioactive gases be a small percentage of 10 CFR 20.1301, "Dose limits for individual members of the public," the staff has not quantified these numbers. The staff's expectations are that licensees will make every reasonable effort to minimize radiological releases and doses through ALARA (as low as reasonably achievable) practices.

The increased number of spent fuel assemblies in storage will raise the heat load on the SFP and could result in a slight increase in the evaporation rate. Other than a small amount of tritiated water released by evaporation, the radionuclides are non-volatile and consequently are not released from the pool water. The discharge of gaseous radioactive effluents will be continually

monitored and will continue to be a small fraction of the limits of 10 CFR 20.1301 and the design objectives of Appendix I to 10 CFR Part 50.

Comment 4: With regard to the additional generation of solid radwaste at DBNPS, our Agency requests you to quantify the amount of additional solid waste that will be generated.

Response: The staff is unable to quantify the additional generation of solid radwaste at DBNPS as a result of storing spent fuel assemblies in the cask pit area. The SFP Purification System currently generates approximately 50 cubic feet of solid radioactive waste annually at the DBNPS. No significant increase in the volume of solid radioactive waste is expected from operating with the expanded storage capacity. The necessity for pool filtration resin replacement is determined primarily by the requirement for water clarity, and the resin is normally changed about once every 18 months. The additional number of fuel assemblies in storage will not significantly affect the frequency of resin replacement.

I hope that this discussion is responsive to your comments. Additional information and detail regarding the licensee's proposal to expand the spent fuel storage capacity into the cask pit area will be included in the staff's safety evaluation supporting the licensee's proposal. Our safety evaluation will be issued shortly and we will provide you with a copy for your information. If you have any additional questions, please do not hesitate to contact Mr. Douglas Pickett of my staff at (301) 415-1364 or by email at [dvp1@nrc.gov](mailto:dvp1@nrc.gov).

Sincerely,

*/RA/*

Anthony J. Mendiola, Chief, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-346

cc: See next page

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