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AUG 23 1976

Docket Nos. 50-237, 50-249,
50-254, 50-265

Commonwealth Edison Company
ATTN: Mr. R. L. Bolger
Assistant Vice President
Post Office Box 767
Chicago, Illinois 60690

Gentlemen:

Your letter of December 8, 1975, requested approval of modifications to the spent fuel storage pools of Dresden Nuclear Power Station Units 2 and 3 and Quad Cities Nuclear Power Station Units 1 and 2 (DPR-19, DPR-25, DPR-29 and DPR-30). The proposed modifications would increase the storage capacity of these fuel storage pools.

We are reviewing your submittal and have determined that the additional information requested in Enclosures A and B is necessary to continue our review. To enable us to maintain our review schedule, please submit the requested information prior to August 27, 1976.

Sincerely,

Original signed by
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:
A & B - Request for
Additional Information

cc w/enclosures:
See next page

OFFICE ➤	OR:ORB #2	OR:ORB #2	OR:ORB #2			
SURNAME ➤	PWO'Connor:rd	RDSilver	DLZiemann			
DATE ➤	8/20/76	8/20/76	8/23/76			

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

cc w/enclosures:
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President and Chairman
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604 Liberty Street
Morris, Illinois 60451

APPENDIX A

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION UNITS 2 AND 3

QUAD CITIES NUCLEAR POWER STATION UNITS 1 AND 2

DOCKET NOS. 50-237, 50-249, 50-254 AND 50-265

REQUEST FOR ADDITIONAL INFORMATION

1. Discuss the extent to which each fuel pool has been analyzed to verify its ability to withstand the increase in overall loading. Identify the loads and load combinations investigated and the acceptance criteria for concluding that the original pool structure is adequate.

2. Clarify if each rack is designed to be free-standing and does not rely on any lateral restraint from the pool walls or adjacent rack structures. If lateral restraint is provided, discuss the effect of increased loading on the restraint (pool wall or existing rack structures). If no lateral restraint is required, provide the minimum clearance between adjacent racks and pool walls for the worst loading condition which includes the effects of the design basis earthquake.

3. Provide structural details, including a description of the materials and method of installation, for the adaptors which will allow the smaller fuel from Unit 1 to be placed in a rack designed for larger fuel. If there are gaps between the fuel assemblies and the walls of the guide tubes, discuss the effect of the additional loads which will be generated by the impact of the fuel assemblies during a postulated seismic excitation.

APPENDIX B

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION UNITS 2 AND 3

QUAD CITIES NUCLEAR POWER STATION UNITS 1 AND 2

DOCKET NOS. 50-237, 50-249, 50-254 AND 50-265

REQUEST FOR ADDITIONAL INFORMATION

1. What are the specific needs that require increased storage capacity in the spent fuel pool (SFP)? Include in the response:

   (a) status of contractual arrangements, if any, with fuel-storage or fuel-reprocessing facilities,

   (b) proposed refueling schedule, including the expected number of fuel assemblies that will be transferred into the SFP at each refueling,

   (c) number of spent fuel assemblies presently stored in the SFP,

   (d) control rod assemblies or other components stored in the SFP, and

   (e) the additional time period that spent fuel assemblies would be stored on-site as a result of the proposed expansion.

2. Discuss the total construction cost associated with the proposed modification, including engineering, capital costs (direct and indirect) and allowance for funds used during construction.

3. Discuss the alternatives to increasing the storage capacity of the SFP. The alternatives considered should include:

   (a) shipment to a fuel reprocessing facility,

   (b) shipment to another reactor site,

   (c) shutting down the reactor.

   The discussion of options (a) and (b) should include a cost comparison in terms of dollars per KgU stored or cost per assembly. The discussion of (c) should include the cost for providing replacement power either from within or outside the licensee's generating system.

4. Discuss whether the commitment of material resources (e.g., stainless steel, boral, B_4C, etc.) would tend to significantly foreclose the alternatives available with respect to any other licensing actions designed to ameliorate a possible shortage of spent fuel storage capacity. Describe the material resources that would be consumed by the proposed modification.

5. Discuss the additional heat load and the anticipated maximum temperature of water in the SFP which would result from the proposed expansion, the resulting increase in evaporation rates, the additional heat load on component and/or plant cooling water systems and whether there will be any signficant increase in the amount of heat released to the environment.

6. Provide the present annual quantity of solid radioactive wastes generated by the SFP purification system. Discuss the expected increase in solid wastes which will result from the expansion of the capacity of the SFP.

7. Please provide data regarding krypton-85 measured from the fuel building ventilation system by year for the last two years. If data are not available from the fuel building ventilation system, provide this data for the ventilation release which includes this system.

8. Provide a discussion of the increases in the doses to personnel from radionuclide concentrations in the SFP due to the expansion of the capacity of the SFP, including the following:

   (a) Provide a table showing the most recent gamma isotopic analysis of SFP water identifying the principal radionuclides and their respective concentrations.

   (b) Please provide the models used to determine the external dose equivalent rate from these radionuclides. Consider the dose equivalent rate at some distance above the center and edge of the pool respectively. (Use relevant experience if necessary.)

   (c) Provide a table of recent analysis performed to determine the principal airborne radionuclides and their respective concentrations in the SFP area.

   (d) Provide the model and assumptions used to determine the increase in dose rate from the radionuclides identified in (c) above in the SFP area and at the site boundary.

   (e) Provide an estimate of the increase in the annual man-rem burden from more frequent changing of the demineralizer resin and filter media.

   (f) Discuss the buildup of crud (e.g., ^{58}Co, ^{60}Co) along the sides of the pool and the removal methods that will be used to reduce radiation levels at the pool edge to as low as reasonably achievable.

   (g) Specify the expected total man-rem to be received by personnel occupying the fuel pool area based on all operations in that area including the doses resulting from (e) and (f) above.

Include a discussion of your radiation protection program, as it affects (a) through (g) above, in your response.

6. What are the specific needs that require increased storage capacity in the spent fuel pool (SFP)? Include in the response:

   (a) status of contractual arrangements, if any, with fuel-storage or fuel-reprocessing facilities,

   (b) proposed refueling schedule, including the expected number of fuel assemblies that will be transferred into the SFP at each refueling,

   (c) number of spent fuel assemblies presently stored in the SFP,

   (d) control rod assemblies or other components stored in the SFP, and

   (e) the additional time period that spent fuel assemblies would be stored on-site as a result of the proposed expansion.

7. Discuss the total construction cost associated with the proposed modification, including engineering, capital costs (direct and indirect) and allowance for funds used during construction.

8. Discuss the alternatives to increasing the storage capacity of the SFP? The alternatives considered should include:

   (a) shipment to a fuel reprocessing facility,

   (b) shipment to another reactor site,

   (c) shutting down the reactor.

   The discussion of options (a) and (b) should include a cost comparison in terms of dollars per KgU stored or cost per assembly. The discussion of (c) should include the cost for providing replacement power either from within or outside the licensee's generating system.

9. Discuss whether the commitment of material resources (e.g., stainless steel, boral, B_4C, etc.) would tend to significantly foreclose the alternatives available with respect to any other licensing actions designed to ameliorate a possible shortage of spent fuel storage capacity. Describe the material resources that would be consumed by the proposed modification.

10. Discuss the additional heat load and the anticipated maximum temperature of water in the SFP which would result from the proposed expansion, the resulting increase in evaporation rates, the additional heat load on component and/or plant cooling water systems and whether there will be any signficant increase in the amount of heat released to the environment.