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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 4, 1979

Docket No. 50-155

Mr. David Bixel
Nuclear Licensing Administrator
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Dear Mr. Bixel:

We are continuing our review of your April 23, 1979 and June 26, 1979 submittals related to the proposed expansion of the storage capacity of the spent fuel pool for the Big Rock Point plant and have found that the additional information described in the enclosure to this letter is needed. Please provide your response within 45 days of the date of this letter.

Sincerely,

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

Enclosure:
Request for Additional
Information

cc w/enclosure:
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Mr. David Bixel

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cc

Mr. Paul A. Perry, Secretary
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Jackson, Michigan 49201

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ENCLOSURE

QUESTIONS FOR THE BIG ROCK POINT
PLANT SPENT FUEL POOL MODIFICATION

1. Provide the estimated volume of contaminated material (e.g., spent fuel racks, seismic restraints, additional pool filters, radwaste system demineralizer resins) expected to be removed from the plant because of the pool modification and shipped to a licensed burial site.
2. Discuss the history of leakage of water from the spent fuel pool, the pool leak collection system and the pool leak detection system. Discuss where pool leakage would be transferred to for disposal.
3. Provide the number of spent fuel movements needed for the proposed pool modification. These fuel movements may disturb the crud material on the floor of the pool and may release additional crud material on the assemblies. Discuss the addition of crud material to the pool water because of these fuel movements during the modification of the pool, the ability of the pool filtering system to remove the crud material from the pool water and the effect of the crud material in the water on dose rates in the vicinity of the pool.
4. Discuss the effect of the proposed pool modification on the radwaste system demineralizer (e.g., frequency of replacement).
5. Provide the failed fuel fraction for each fuel cycle for the last 5 years at Big Rock Point.

6. Discuss the instrumentation to indicate spent fuel pool water level and water temperature. Include the capability of the instrumentation to alarm and the location of the alarms.
7. Identify the principal radionuclides and their respective concentrations in the spent fuel pool water found by gamma isotopic analyses prior to and following refueling. Provide the dose rate values above and around the spent fuel pool from these concentrations of radionuclides.
8. Provide an estimate of the annual man-rem from all operations in the SFP area including refueling. The estimate should be based on occupancy time and dose rates from fission and corrosion product concentrations and any contaminated equipment that may be stored in the pool.
9. In your submittal dated April 23, 1979, you stated that the failed fuel rack to be removed from the spent fuel pool will be cut up and shipped offsite for disposal. You estimated 27 man-rem will be received by personnel performing these operations. Based on the above actions, please provide the following information:
 - (a) Provide the breakdown of your evaluation of 27 man-rem as follows: number of workers involved in each phase of the operation including divers, if any; the duration of each phase; the exposure rate (mr/hr) to occupational workers during each phase of the operation including the dose rate expected from the rack when it is removed from the SFP water and the man rem received by all workers involved for each phase.

Demonstrate that the removal of the rack with a cumulative dose of 27 man-rem is as low as reasonably achievable in contrast to other licensees that have performed the same operation removing several contaminated spent fuel racks with a lesser man-rem exposure.

- (b) Demonstrate that your disposal method of cutting and shipping the failed fuel rack to be removed will provide as low as is reasonably achievable exposure as compared to crating the entire rack and then shipping it.
10. Provide a list of all objects that are required to be moved over or near the spent fuel storage pool. For each object listed, provide its approximate weight and size, a diagram or description of the transfer path utilized, and the frequency of movement.
 11. Identify any heavy load or cask drop analyses performed to date for your facility. Provide a copy of all such analyses not previously submitted to the NRC staff.