

September 2, 1998

Mr. David A. Lochbaum
Nuclear Safety Engineer
Union of Concerned Scientists
1616 P Street NW Suite 310
Washington, DC 20036-1495

Subject: QUESTIONS REGARDING NRC INSPECTION REPORT 50-333/98-02

Dear Mr. Lochbaum:

I am responding your letter, dated August 20, 1998, which was addressed to Mr. Gordon Hunegs and concerned questions about the New York Power Authority's (NYPA) James A. FitzPatrick Nuclear Power Plant. Specifically, your questions concerned NYPA's use of the reactor building crane 1000 pound hoist to move irradiated fuel assemblies within the spent fuel pool, as documented in NRC inspection report 50-333/98-02.

NYPA's plan to use the reactor building crane 1000 pound hoist in this manner was first documented in NRC inspection report 50-333/97-07. The issue was left unresolved by the resident inspectors pending further NRC review to determine whether this constituted an unreviewed safety question. In consultation with the Office of Nuclear Reactor Regulation, the NRC Region I staff determined that the proposed changes to the procedures to use the reactor building crane 1000 pound hoist to transport irradiated fuel assemblies within the spent fuel pool instead of the refueling bridge main hoist did not require prior Commission approval in accordance with 10 CFR Part 50.59.

The NRC staff determined that an unreviewed safety question was not involved in the proposed change in the procedures to use the reactor building crane 1000 pound hoist. Although the final safety analysis report (FSAR) accident analysis does not involve failure of the reactor building crane, it is based on the worst possible consequence involving a 100% failure of the primary fission product boundary during a refueling accident, and is therefore a bounding analysis. Use of the overhead crane to move the spent fuel assemblies creates the possibility of a different way of initiating a fuel handling accident. However, because it is bounded by the worse case accident, it is deemed to have been evaluated previously in the FSAR. The staff recognizes that the mechanisms involved in initiating the accident may be different. However, the accident itself satisfies the guidelines of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," Section 5.1, using the worst consequences that can result from a credible accident. We believe that using the current processes and procedures in moving fuel in the spent fuel pool does not cause undue risk and provides adequate protection with respect to the health and safety of the public. //

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Your specific questions on this issue, as documented in your August 20, 1998, letter, are addressed in the attachment to this letter. In addition, during a phone conversation between you and Mr. David Lew on August 27, 1998, you provided another question concerning this issue. This additional question is also addressed in the attachment to this letter. If you should have further questions or need clarification on our responses, please contact Mr. David Lew, Project Branch 2A, Region I, at 610-337-5255.

Sincerely,

Original Signed by:

Charles W. Hehl, Director
Division of Reactor Projects

Docket No.: 50-333

License No.: DPR-59

Attachment: Questions Concerning the Reactor Building Crane

cc w/attachment:

M. J. Colomb, Site Executive Officer
C. D. Rappleyea, Chairman and Chief Executive Officer
E. Zeltmann, President and Chief Operating Officer
R. Hiney, Executive Vice President for Project Operations
J. Knubel, Chief Nuclear Officer and Senior Vice President
H. P. Salmon, Jr., Vice President of Engineering
W. Josiger, Vice President - Engineering and Project Management
J. Kelly, Director - Regulatory Affairs and Special Projects
T. Dougherty, Vice President - Nuclear Engineering
R. Deasy, Vice President - Appraisal and Compliance Services
R. Patch, Director - Quality Assurance
G. C. Goldstein, Assistant General Counsel
C. D. Faison, Director, Nuclear Licensing, NYPA
K. Peters, Licensing Manager
T. Morra, Executive Chair, Four County Nuclear Safety Committee
Supervisor, Town of Scriba
C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law
P. Eddy, Electric Division, Department of Public Service, State of New York
G. T. Goering, Consultant, New York Power Authority
J. E. Gagliardo, Consultant, New York Power Authority
E. S. Beckjord, Consultant, New York Power Authority
F. William Valentino, President, New York State Energy Research
and Development Authority
J. Spath, Program Director, New York State Energy Research
and Development Authority

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Attachment - Questions Concerning the Reactor Building Crane

1. Did the safety evaluation address the probability/consequences of an irradiated fuel assembly being subject to larger vertical displacement?

NYPA's safety evaluation JAF-SE-97-003 addressed the consequence of the vertical displacement of an irradiated fuel assembly using the reactor building crane. NYPA addressed vertical displacement by installing proper length rigging with a mechanical stop to prevent the an irradiated fuel assembly from being lifted more than 24 inches above the storage racks. A backup limit switch, which is set to prevent movement greater than 24 inches above the storage rack, and an independent primary limit switch, which is set 6 to 12 inches below the backup limit switch setting, were installed. In addition, NYPA implemented procedures to require the limit switches be verified daily prior to handling fuel assemblies, the crane be inspected daily, and a second operator be staged as a backup safety measure to the primary operator, with switch-off controls in event of a problem with the motion of the crane. Limiting the vertical displacement to 24 inches above the storage racks limits a postulated straight drop to the base of a storage cell to about 16 feet, which is bounded by the 30 feet drop assumed in the analyzed accident.

2. Did the safety evaluation address load cell protection afforded by the reactor building crane?

NYPA's safety evaluation JAF-SE-97-003 addressed load cell protection for the reactor building crane 1000 pound hoist, which was used for moving irradiated fuel assemblies. NYPA installed a load cell through the temporary modification process to provide for a digital readout to the refueling personnel and an automatic stop if an 800 pound load limit is reached. This 800 pound load limit was more restrictive than the 1175 pound load limit on the refueling bridge main hoist. The resident inspectors observed that this load cell was in place when NYPA moved irradiated fuel in June 1998 with the reactor building crane 1000 pound hoist.

3. Is the probability of a fuel handling accident using the reactor building crane greater than the probability when using the refueling platform?

NYPA's safety evaluation JAF-SE-97-003 concluded that the probability of a fuel handling accident would not increase, because alternative equipment and controls being used to move a fuel assembly using the reactor building crane 1000 pound hoist provided similar safety features as fuel movements using the refueling bridge main hoist.

4. Has NYPA moved any irradiated fuel assemblies using the reactor building crane? If not, when do they plan to conduct this activity?

NYPA used the reactor building crane 1000 pound hoist and, from June 17 through June 25, 1998, has successfully moved 71 irradiated fuel assemblies. As of August 21, 1998, NYPA's work control schedule indicated that the remaining 39 irradiated fuel assemblies, which had been originally planned for relocation to peripheral storage cell locations, will be moved beginning September 16, 1998.

5. Question provided to the NRC during a phone conversation on August 27, 1998: The travel limits of the reactor building crane extend beyond the wall boundaries of the spent fuel pool, whereas the travel limits of the refueling bridge does not. Does this difference result in an increase in the probability of irradiated fuel impacting the spent fuel pool wall when using the reactor building crane? If so, does this constitute an unreviewed safety question?

The licensee instituted controls on the movement of the reactor building crane in order to ensure that fuel assemblies will not impact the sides of the spent fuel pool. These precautions included using the refueling bridge to move fuel adjacent to the empty cells, so that the travel path using the crane would be as short as practical. The crane speed also will be maintained at a slow rate over the short travel distance. The licensee also provides for stationing a second operator monitoring fuel movement activities with the ability to cut power in the event of a crane malfunction. The licensee's safety evaluation concluded that these controls provide a level of protection similar to that provided when using the refueling bridge such that the probability of a refueling accident was not increased. The NRC staff has not identified any reason to take exception to the licensee's conclusion.