

UNITED STATES NUCLEAR REGULATORY COMMISSION

POWER AUTHORITY OF THE STATE OF NEW YORK

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

ENVIRONMENTAL ASSESSMENT AND

FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from certain requirements of 10 CFR Part 50, Appendix J, to the Power Authority of the State of New York (the licensee) for the James A. FitzPatrick Nuclear Power Plant, located at the licensee's site in Oswego County, New York.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action:

By letter dated January 11, 1994, the licensee requested a schedular exemption pursuant to 10 CFR 50.12(a) from the requirements of 10 CFR Part 50, Appendix J, Section III.D.3. Specifically, the licensee requested one-time relief from the requirement to perform Type C tests (local leak-rate tests (LLRT)) at intervals of no greater than 2 years for the shutdown cooling isolation valves (10MOV-17 and 10MOV-18). This one-time only delay, until the next refueling outage currently scheduled to begin in November 1994, was requested for the performance of these leakage tests. The licensee's request was necessitated by the extended 1991-1993 refueling outage and the length of the current operating cycle.

The Need for the Proposed Action:

The schedular exemption is required to permit the licensee to operate the plant until the next refueling outage (Reload 11/Cycle 12), currently scheduled to begin in November 1994.

The shutdown cooling valves were previously tested during the last refueling outage (Reload 10/Cycle 11). This was an extended outage that began in November 1991 and ended in January 1993. The Type C tests on the subject valves were performed on May 30, 1992, for the outboard isolation valve (10MOV-17), and June 5, 1992, for the inboard isolation valve (10MOV-18). Subsequent delays in the outage resulted in these tests being performed significantly in advance of the start of the operating cycle (more than 7 months prior to the end of the outage). As a result, the 2 year test interval will be reached for these valves (May 30, 1994/June 5, 1994) 6 to 7 months prior to the next scheduled refueling outage. The exemption would permit a deferral in the performance of Type C testing of the shutdown cooling isolation valves beyond the 2-year limiting interval until the next refueling outage.

The most effective means of removing reactor core decay heat is with the shutdown cooling mode of the residual heat removal (RHR) system. This requires both of the stated isolation valves to be in the open position. The shutdown cooling mode of the RHR system must be removed from service for approximately 24 hours to perform a LLRT (Type C) of its isolation valves. This is the time required to tag-out the system, drain the line, perform the test, refill the line, and return the system to service. To

avoid overheating the reactor coolant system with the shutdown cooling mode inoperable, one of the following two conditions must exist:

1. The reactor needs to be shutdown for several months to permit sufficient reduction in decay heat levels for use of an alternate shutdown cooling method. The alternate cooling method with the highest heat removal capacity is the Reactor Water Cleanup system in the blowdown mode. However, the reactor must be shutdown for more than 3 months before this method can handle the decay heat load.
2. The plant needs to be in the refueling condition; i.e., reactor head removed, reactor cavity flooded up and connected to the spent fuel pool. This permits the removal of the normal shutdown cooling system from operation and testing of these valves.

A 3-week surveillance/maintenance outage is planned for spring 1994. However, the decay heat levels present during any outage less than several months precludes the use of the alternate cooling method without placing the plant in the refueling configuration. The exemption would preclude the need to place the plant in the refueling configuration prior to the next scheduled refueling outage. Without the exemption, the licensee would be required to remove the drywell and reactor heads and connect the reactor cavity to the spent fuel pool solely for the purpose of testing the shutdown cooling isolation valves. Placing the plant in the refueling configuration would significantly lengthen the spring 1994 outage and would require significant resources. Furthermore, placing the plant in the refueling configuration to accommodate testing of the isolation valves would increase occupational radiation exposures. For these reasons, the

licensee has determined that compliance with the regulation would result in undue hardship and costs.

Environmental Impacts of the Proposed Action:

The proposed schedular exemption would allow the licensee to continue to operate the plant from May 30, 1994, until the next refueling outage which is scheduled for November 1994. During that refueling outage, the Type C test on shutdown cooling system valves 10MOV-17 and 10MOV-18 would be performed in accordance with the requirements of 10 CFR Part 50, Appendix J. The remaining Type B penetrations and Type C tested valves have been or will be leak rate tested such that they will not exceed the 24-month frequency prior to the November 1994 refueling outage.

The operating configuration of the shutdown cooling isolation valves and the RHR system when the reactor coolant system is pressurized (greater than 75 psig) substantially minimizes the possibility of gross leakage through these valves. A high reactor pressure interlock, as well as plant operating procedures, assures that these isolation valves are closed whenever reactor pressure is above 75 psig. This protects the low pressure RHR system from overpressurization. The RHR system suction piping is designed for 450 psig. Gross leakage while the reactor is pressurized would be detected by high pressure on the RHR suction piping or an increase in suppression pool inventory. Consequently, the maintenance of normal operating status of the RHR system assures the absence of gross leakage through these valves.

These valves also receive an isolation signal in the event of a plant accident (reactor vessel low water level or high drywell pressure). This assures isolation of a potential leakage path from the reactor coolant system to the reactor building. For this path to exist, leakage through both isolation valves, and a breach of the RHR system piping would need to occur simultaneously. Since the isolation valves are maintained closed with the reactor pressurized, it is improbable the leakage through the valves will increase while the plant is operating. The redundant isolation valves provide two leakage barriers which limit the pathway leakage rate to that experienced by the valve with smallest leakage rate. For these reasons, the potential for significant leakage to the reactor building by way of the shutdown cooling line is minimal.

The penetration included in the licensee's schedular exemption request represents only 6.4 percent of the total "as left" leakage at the beginning of the current operating cycle. The total "as left" minimum path leakage for all penetrations was only 0.073 La and the total "as left" minimum path leakage for the penetration addressed in the proposed exemption was only 0.0046 La. The replacement of both isolation valves with valves of improved design provides added confidence that excessive leakage will not be experienced. The inboard valve 10MOV-18 was replaced during the 1985 refueling outage and has successfully passed three out of four Type C tests performed during refueling outages since its replacement. The outboard isolation valve 10MOV-17 was replaced with a similarly designed new valve during the last refueling outage (1992). The limited number of valve strokes these valves are subject to over any one operating cycle minimizes

valve degradation due to wear. This provides reasonable assurance that the requested surveillance interval expansion will not result in the Type B and C leakage rate total exceeding the 0.6 La limit of 10 CFR Part 50, Appendix J. Therefore, the Commission concludes that there are no significant radiological environmental impacts associated with the proposed schedular exemption.

With regard to potential nonradiological impacts, the proposed schedular exemption only involves LLRT on containment isolation valves. The exemption does not affect nonradiological plant effluents and has no other environmental impact. Therefore, the Commission concludes that there are no significant nonradiological impacts associated with the proposed schedular exemption.

Alternatives to the Proposed Action:

Since the Commission has concluded that there are no significant environmental effects that would result from the proposed schedular exemption, any alternatives with equal or greater environmental impacts need not be evaluated. The principal alternative would be to deny the licensee's request. Such action would not reduce environmental impacts of the James A. FitzPatrick Nuclear Power Plant and would result in undue hardship on the licensee possibly including an unwarranted shutdown of the plant.

Alternative Use of Resources:

The actions associated with the granting of the proposed schedular exemption as detailed above do not involve the use of resources not

previously considered in connection with the "Final Environmental Statement for the James A. FitzPatrick Nuclear Power Plant," dated March 1973.

Agencies and Persons Consulted:

The NRC staff reviewed the licensee's submittal that supports the proposed schedular exemption discussed above. The NRC staff contacted the State of New York Energy Office regarding the environmental impact of this proposed action.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for the proposed schedular exemption.

Based upon the foregoing environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment.

For further details with respect to this action, see the licensee's application for the schedular exemption dated January 11, 1994. This document is available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW., Washington, DC 20555, and at the local public document room located at the Penfield Library, State University of New York, Oswego, New York 13126.

Dated at Rockville, Maryland, this 9th day of March 1994.

FOR THE NUCLEAR REGULATORY COMMISSION

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