

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
POWER AUTHORITY OF THE)	Docket No. 50-333
STATE OF NEW YORK)	
)	
(James A. FitzPatrick)	
Nuclear Power Plant))	

EXEMPTION

I.

The Power Authority of the State of New York (PASNY; licensee) is the holder of Facility Operating License No. DPR-59, which authorizes operation of the James A. FitzPatrick Nuclear Power Plant (the facility). The license provides, among other things, that the facility is subject to all rules, regulations, and Orders of the Nuclear Regulatory Commission (the Commission) now or hereaft. in effect.

The facility is a boiling water reactor located at the licensee's site in Oswego County, New York.

II.

On November 19, 1980, the Commission published a revised Section 50.48 and a new Appendix R to 10 CFR Part 50 regarding fire protection features of nuclear power plants (45 FR 76602). The revised Section 50.48 and Appendix R became effective on February 17, 1981.

By letter dated June 26, 1992, as revised by letter dated July 31, 1992, the licensee requested six exemptions from 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1,

1979," as a result of a recent reassessment of the Fire Protection Program at the James A. FitzPatrick Nuclear Power Plant. Specifically, the licensee is requesting exemptions from 10 CFR Part 50, Appendix R, Sections III.L.1.b, III.L.2.b., III.G.2, III.G.3, III.L, III.J and III.G.1. The exemption requests are divided into three exemption categories: revised, new, and temporary. The revised exemptions are necessary to include additional fire areas and/or equipment. The new exemption results from the new 1992 10 CFR Part 50, Appendix R, reanalysis for FitzPatrick. The temporary exemptions are necessary to permit plant startup before modifications to bring the plant into compliance with Appendix R can be completed.

The Commission may grant exemptions from the requirements of the regulations which, pursuant to 10 CFR 50.12(a): (1) are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security, and (2) present special circumstances. Section 50.12(a)(2) of 10 CFR Part 50 indicates the special circumstances which must be present for the Commission to consider granting an exemption.

III.

III.A ALTERNATE SHUTDOWN WITH CONTROL ROOM EVACUATION - (REVISED)

III.A.1 Description

The licensee requests a revised exemption from the requirements of 10 CFR Part 50, Appendix R, Sections III.L.1.b and III.L.2.b, as they apply to the James A. FitzPatrick Nuclear Power Plant, so that the reactor coolant level be permitted to drop below the top of the core during use of alternative safe shutdown procedures which includes the possibility of Control Room evacuation

following a fire in any of five fire zones: (1) Control Room; (2) Relay Room; (3) Cable Spreading Room; (4) North Cable Tunnel; and (5) Battery Room Corridor.

This exemption would extend the current exemption that allows the use of alternate shutdown with Control Room evacuation to two additional fire areas: (1) Fire Area ID (North Cable Tunnel) and (2) Fire Area XVI (Battery Room Corridor). The result of this request is to treat a fire in these two areas in the same fashion as the current exemption treats a fire in Fire Area VII (Control Room, Relay Room, and Cable Spreading Room).

III.A.2 Evaluation

By letter dated April 26, 1983, the NRC approved the use of the Automatic Depressurization System (ADS) in conjunction with the Residual Heat Removal (RHR) system in the Low Pressure Coolant Injection (LPCI) mode of operation for achieving remote reactor shutdown for a fire in Fire Area VII (Control Room, Relay Room, and Cable Spreading Room).

By letter dated September 15, 1986, the NRC approved an exemption from the requirements of 10 CFR Part 50, Appendix R, Sections III.L.1.b and III.L.2.b, so that the reactor coolant level be permitted to drop below the top of the core during the use of alternate safe shutdown following a postulated fire which renders the Control Room uninhabitable. The associated exemption request was based on an analysis which determined the amount of time available for operator action before ADS initiation was necessary. Assuming the loss of all high pressure makeup coincident with reactor scram and isolation, this analysis justified an increase in the operator response time from 10 to 30 minutes. This increase in operator action time would result in

a temporary uncovering of the top of the core for a maximum duration of 150 seconds.

The proposed exemption would extend the current exemption that allows the use of alternate shutdown with Control Room evacuation to two additional fire areas: (1) Fire Area ID (North Cable Tunnel) and (2) Fire Area XVI (Battery Room Corridor).

The NRC staff has reviewed the licensee's request for exemption dated June 26, 1992, and the staff's safety evaluation associated with the exemption dated September 15, 1985. Based on this review, the staff has determined that the proposed revised exemption does not pose a threat to the fuel cladding integrity. Furthermore, the staff has determined that an operator action time of 30 minutes will not compromise the ability of the suppression pool to condense steam in a stable condition during steam discharge via safety/relief valves, or compromise the integrity of the suppression pool. The NRC staff finds that our original conclusions for Fire Area VII (Control Room, Relay Room, and Cable Spreading Room) are valid for the two new areas; i.e., Fire Area ID (North Cable Tunnel) and Fire Area XVI (Battery Room Corridor). Therefore, the NRC staff finds that the revised exemption is acceptable.

III.B TORUS ROOM - (REVISED)

III.B.1 Description

The licensee requests a revised exemption from the requirements of 10 CFR Part 50, Appendix R, Sections III.G.2, III.G.3, and III.L, as they apply to the James A. FitzPatrick Nuclear Power Plant, with respect to the separation of redundant safe shutdown circuits in that they are not in accordance with Section III.G.2 and alternate shutdown capability has not been provided in accordance with Sections III.G.3 and III.L in the Torus Room (Fire Area XV).

This exemption would revise the current exemption to more accurately reflect the equipment in the Torus Room. It would also provide a revised technical basis for the exemption to reflect the new area description.

III.B.2 Evaluation

On July 1, 1983, the NRC approved an exemption from the provisions of Sections III.G.2, III.G.3, and III.L of 10 CFR Part 50, Appendix R, to the extent that separation and/or fire protection of redundant shutdown divisions or the installation of an alternate shutdown capability is required for the Torus Room. The licensee justified the exemption request by stating that: the area contains only the suppression pool and is a controlled access area bounded on all sides by 3-hour fire-rated masonry construction; there are no combustible materials and no significant fire hazards in the area; and the shutdown-related components in the area consist only of the RHR suction valves of both divisions which were disabled in the open position. This description of the Torus Room did not accurately reflect the Torus Room and the equipment in the Torus Room.

The proposed revised exemption is from the requirement of 10 CFR Part 50, Appendix R, Sections III.G.2, III.G.3, and III.L, with respect to the separation of redundant safe shutdown circuits in that they are not in accordance with Section III.G.2 and alternate shutdown capability has not been provided in accordance with Sections III.G.3 and III.L in the Torus Room (Fire Area XV). This exemption request revises the July 1, 1983, exemption to more accurately reflect the equipment in the Torus Room and the unsealed penetrations of this room.

The Torus Room (Fire Area XV) is located in the Reactor Building and is bounded on all sides by masonry construction. The floor and more than half of

the walls of the Torus Room are below grade, adjacent to the exterior and thus not an issue since fire propagation from the exterior is not a concern. The walls that separate the Torus Room from the crescent areas (Fire Areas XVII and XVIII) are 3-foot thick reinforced concrete. The ceiling that separates the Torus Room from Reactor Building elevation 272' (Fire Areas IX and X) is 2-foot thick reinforced concrete. The Torus Room is essentially devoid of exposed combustibles.

The licensee has identified unsealed penetrations in the stated walls and ceiling. The licensee has evaluated the subject walls and ceiling and has determined that they are adequate fire area boundaries for the Torus Room. Specifically, a fire is not expected to damage circuits and/or equipment in the Torus Room via the unrated and/or unsealed openings. Furthermore, in the unlikely event that such a fire did cause damage in the Torus Room, the damage would not cause loss of redundant safe shutdown capability.

The Torus Room contains the torus, valves, pipes, non-combustible insulation, instrument tubes, and cables installed in conduits. In the subject exemption dated July 1, 1983, the description of the Torus Room stated that shutdown-related components in the area consist only of the RHR pump suction valves for both divisions. In the revised exemption request dated June 26, 1992, as revised on July 31, 1992, the licensee identified other shutdown system components located in the Torus Room. However, the licensee's evaluation concluded that even with the additional shutdown system components in the Torus Room, adequate safe shutdown capability remains available in the event of a fire.

The NRC staff has reviewed the licensee's request for exemption dated June 26, 1992, as revised on July 31, 1992, and the staff's safety evaluation

associated with the exemption dated July 1, 1983. Based on this review, the staff has determined that our original conclusion for the Torus Room (Fire Area XV) remains valid given the new description of the area. Specifically, we conclude that the modifications required to achieve compliance with Sections III.G.2, III.G.3, and III.L of 10 CFR Part 50, Appendix R, would not significantly enhance the level of safety above that provided by the existing fire protection. Therefore, the NRC staff finds that the revised exemption is acceptable.

III.C OUTDOOR 8-HOUR APPENDIX R LIGHTING - (NEW)

III.C.1 Description

The licensee requests an exemption from the requirements of 10 CFR Part 50, Appendix R, Section III.J, as they apply to the James A. FitzPatrick Nuclear Power Plant, which mandate permanently installed 8-hour Appendix R lighting in outdoor areas. The requested exemption is to use general outdoor lights, outdoor security lights, vehicle headlights and/or flashlights for exterior access and egress routes not only for the fire areas listed in this exemption request, but for any fire area where exterior access and egress routes may be used.

A fire in Fire Area ID, VII, IX, X, XI, XV, XVII, or XVIII requires operator actions in the Containment Atmosphere Dilution (CAD) housing which is reached via exterior access and egress routes. A fire in Fire Area IV, VII, or XVI requires the transport of equipment from the warehouse to the plant. Operator actions take place inside buildings or next to doors where interior 8-hour Appendix R lighting is available.

III.C.2 Evaluation

The licensee requests an exemption from the requirements of 10 CFR Part 50, Appendix R, Section III.J, that mandate permanently installed 8-hour Appendix R lighting in outdoor areas. The requested exemption is to use general outdoor lights, outdoor security lights, vehicle headlights and/or flashlights for exterior access and egress routes not only for the fire areas listed in this exemption request, but for any fire area where exterior access and egress routes may be used.

The fire areas and fire zones affected are:

<u>FIRE AREA</u>	<u>FIRE ZONE</u>	<u>AREA DESCRIPTION</u>
ID	CT-4	North Cable Tunnel el. 286'
IV	BR-3 BR-4	Battery Room 3 el. 272' Battery Room 4 el. 272'
VII	CR-1 RR-1 CS-1	Control Room el. 300' Relay Room el. 284' Cable Spreading Room el. 272'
IX	SB-1 RB-1A	Standby Gas Filter Room el. 272' Reactor Building East Side el. 272', Southeast Quadrant el. 300', and Entire Floor on el. 326', el. 344', and el. 369'
X	RB-1B	Reactor Building East Side el. 272' and Southwest Quadrant el. 300'
XI	CT-3	South Cable Tunnel el. 286'
XV	SU-1	Torus Room
XVI	BR-5	Battery Room Corridor el. 272'
XVII	RB-1E	Reactor Building East Crescent Area el. 227'
XVIII	RB-1W	Reactor Building West Crescent Area el. 227'
YARD	CAD-1	West End of Containment Air Dilution

CAD-2	Building East End of Containment Air Dilution Building
CST-V	Condensate Storage Tank Concrete Vault
MH-2	Manhole No. 2 Located East of Reactor Building and South of Auxiliary Boiler Room

The licensee's technical justification for this proposed new exemption states that for locations inside buildings where access, egress, and operator actions are required for Appendix R safe shutdown, 8-hour Appendix R lighting has been or will be installed prior to startup from the current refueling outage. Only the outdoor areas that provide access/egress for many of these indoor areas do not have 8-hour battery powered emergency lights as required by Section III.J of 10 CFR Part 50, Appendix R. However, lighting is provided by general outdoor lights, outdoor security lights, vehicle headlights and/or flashlights.

The NRC staff has reviewed the licensee's technical justification and bases supporting this exemption request. The staff concludes that adequate lighting will be provided for all outdoor locations that serve as access/egress routes to and from areas required for operator actions during fires. Therefore, the NRC staff finds that this new exemption is acceptable.

III.D PUMP ROOM VENTILATION - (TEMPORARY)

III.D.1 Description

The licensee requests a temporary exemption from the requirements of 10 CFR Part 50, Appendix R, Section III.G.1, as they apply to the James A. FitzPatrick Nuclear Power Plant, with respect to the ventilation systems in the Emergency Service Water (ESW) and Residual Heat Removal Service Water (RHRSW) Pump Rooms (Fire Areas XII and XIII) being free of fire damage. The

exemption is needed until the modifications can be completed to assure that one division of RHRSW and ESW pumps and either the electric-driven fire pump or diesel-driven fire pump and their associated ventilation systems will be available in the event of a fire in Fire Areas IB or II. The modifications are scheduled to be completed prior to startup from the Reload 11/Cycle 12 refueling outage which is currently scheduled to begin in October 1993. Interim compensatory actions will be implemented until the modifications are completed.

III.D.2 Evaluation

The RHRSW A Pump and C Pump, the ESW A Pump, and the Electric Fire Pump are located in the North Safety Related Pump Room (Fire Area XIII). The RHRSW B Pump and D Pump as well as the ESW B Pump are located in the South Safety Related Pump Room (Fire Area XII). The Diesel Fire Pump is located in the West Diesel Fire Pump Room (Fire Area IB). These rooms are separate compartments in the Screenwell House. Air to cool these compartments is drawn and exhausted through openings in the Screenwell House. Control Panels for the exhaust fans serving these compartments are located in the Screenwell House approximately 10 feet apart.

A fire in the Screenwell House (Fire Area IB/Fire Zone SH-13) could damage the Control Panels which could deenergize the exhaust fans. Additionally, the fire could close the dampers in the room air intakes. A fire in the East Cable Tunnel (Fire Area II/Fire Zone CT-2) could damage cables which could deenergize the exhaust fans. The loss of cooling to these compartments when the pumps are operating could cause the pumps to overheat and fail.

The licensee is in the process of developing modifications that will assure that ventilation is available to one division of RHRSW and ESW and either the electric- or diesel-driven fire pump in the event of a fire in the Screenwall House or in the East Cable tunnel. However, it is anticipated that the modifications will be extensive and, due to the procurement of long lead time equipment, will require approximately 18 months to complete. The licensee has proposed interim compensatory actions until the above stated modifications are complete. These interim compensatory actions are as follows:

- a) Close fire doors 76FDR-SP-255-2 and 76FDR-SP-255-4 to assure separation between the North and South Safety Related Pump Rooms and the East Cable tunnel.
- b) Close fire damper 73FD-1F to assure separation between the North Safety Related Pump Room and the West Diesel Fire Pump Room.
- c) ETLs associated with four fire dampers (73-FD-1A, 73-FD-1B, 73-FD-1C, and 73-FD-1D) will be replaced with 165 degree F fusible-links (closure of the dampers is annunciated in the Control Room).
- d) Modify the fire detection circuitry to assure that two fans (73FN-3A and 73FN-3B) will not stop in the event of detection activation. The existing logic circuitry turns these fans off if the associated thermal detector in the area is activated.
- e) Combustible free zones will be established around Control Panels 73HV-11B and 73HV-11A and around fire dampers 73FD-1A, 73FD-1B, 73FD-1C, and 73FD-1D.
- f) Portable smoke ejectors will be readily available to ventilate the North Safety Related Pump Room in the unlikely event of a fire. The operations staff and the plant fire brigade will be instructed on the purpose of these ejectors.
- g) Establish a 1-hour roving fire watch who will be instructed to assure that the combustibile free zones are maintained.

The NRC staff has reviewed the licensee's technical justification, bases, and interim compensatory actions supporting this temporary exemption request. The staff has determined that early detection is assured by thermal fire

detection, area smoke detection, and high area temperature detection, all of which alarm in the Control Room. Furthermore, early detection capability is augmented by the stated fire watch, who also serves to manage combustible material levels. The staff concludes that the interim compensatory actions, in addition to the current level of fire protection and detection, provide an equivalent level of protection as that provided by strict compliance with 10 CFR Part 50, Appendix R, Section III.G.1. Furthermore, the exemption provides only temporary relief from the applicable regulation and the licensee has made good faith efforts to comply with the regulation. Therefore, the NRC staff finds that this temporary exemption is acceptable.

III.E CABLE TUNNEL SUPPRESSION SYSTEMS - (TEMPORARY)

III.E.1 Description

The licensee requests a temporary exemption from the requirements of 10 CFR Part 50, Appendix R, Sections III.C.2 and III.G.3, as they apply to the James A. FitzPatrick Nuclear Power Plant, with respect to a full area suppression system being required in the West Cable Tunnel (Fire Area IC) to protect redundant circuits that are installed in this area. The exemption is needed until modifications can be completed to provide fire suppression adequate for the hazards present. Interim compensatory actions will be implemented until the modifications are completed.

In addition, a full area suppression system is being installed in the East Cable Tunnel (Fire Area II). The inoperability of the existing suppression system is governed by the requirements of Branch Technical Position (BTP) 9.5-1, Appendix A, and the Technical Specifications.

III.E.2 Evaluation

On January 15, 1992, the licensee declared the automatic fire suppression systems in the East and West Cable Tunnels inoperable. The systems were declared inoperable after a review of the hydraulic design calculations indicated that the spray systems did not provide adequate coverage. Although the existing systems have been declared inoperable, they are still available, and provide a level of protection. The licensee has developed modifications to the cable tunnel suppression systems. The installation of the new systems will be done in series so that at least one tunnel has an available suppression system. The modifications will be completed no later than July 31, 1993.

Early detection of a fire in either tunnel is provided by an existing automatic ionization smoke detection system. This system provides indication of a fire to operators in the Control Room. Fire suppression capabilities include portable carbon dioxide fire extinguishers installed throughout each tunnel and backup manual fire suppression available with installed hose stations throughout each tunnel as well as hose stations in adjacent areas. In addition to the stated fire detection and suppression capabilities, the licensee will implement interim compensatory actions until fire suppression systems capable of providing coverage adequate for the East and West Cable tunnels can be installed. These compensatory actions are a continuous fire watch that will be posted in each tunnel and daily walkdowns to assure that transient combustibles in each tunnel are held to an absolute minimum.

The NRC staff has reviewed the licensee's technical justification, bases, and interim compensatory actions supporting this temporary exemption request. The staff concludes that the interim compensatory actions, in addition to the

current level of fire protection and detection, provide an equivalent level of protection as that provided by strict compliance with 10 CFR Part 50, Appendix R, Sections III.G.2 and III.G.3. Furthermore, the exemption provides only temporary relief from the applicable regulation and the licensee has made good faith efforts to comply with the regulation. Therefore, the NRC staff finds that this temporary exemption is acceptable.

III.F PIPING PENETRATIONS - (TEMPO, RY)

III.F.1 Description

The licensee requests a temporary exemption from the requirements of 10 CFR Part 50, Appendix R, Section III.G.2, as they apply to the James A. FitzPatrick Nuclear Power Plant with respect to 3-hour-rated fire barrier penetration seals. The exemption is needed until concerns associated with bondstrand, greenthread, and PVC (polyvinyl chloride) piping penetrations can be resolved and modifications can be completed to assure separation by a 3-hour-rated fire barrier. Interim compensatory actions will be implemented until the modifications are completed. The modifications are scheduled to be completed by November 30, 1992.

III.F.2 Evaluation

During a recent fire barrier penetration seal baseline inspection, the licensee identified several fire barrier penetrations that have penetrating items of bondstrand, greenthread, or PVC piping. In accordance with the requirements of FitzPatrick Technical Specification Section 3.12.F, "Fire Barrier Penetration Seals," the licensee declared the penetrations inoperable because of a lack of qualifying tests and the potential of the piping to degrade the existing 3-hour-rated fire barrier penetration seals.

Subsequently, the licensee identified additional bondstrand, greenthread, and

PVC piping penetrations and declared them inoperable. Preliminary testing of typical bondstrand, greenthread, and PVC piping penetration configurations has revealed that the ability of penetration seals of closed (or non-vented) piping systems to meet the requirements for a 3-hour-rated fire barrier penetration seal is highly probable. However, the ability of penetration seals of open (or vented) piping systems to meet the requirements for a 3-hour-rated fire barrier penetration seal is questionable.

The licensee proposes to implement hourly fire watch patrols in each of the fire areas where bondstrand, greenthread, or PVC piping systems penetrate 3-hour-rated fire barriers. This compensatory action will be taken in conjunction with existing fire protection features which include automatic suppression and/or detection systems, manual hose stations and portable fire extinguishers, and the trained on-site fire brigade.

The NRC staff has reviewed the licensee's technical justification, bases, and interim compensatory actions supporting this temporary exemption request. The staff concludes that the interim compensatory actions, in addition to the current level of fire protection and detection, provide an equivalent level of protection as that provided by strict compliance with 10 CFR Part 50, Appendix R, Section III.G.2. Furthermore, the exemption provides only temporary relief from the applicable regulation and the licensee has made good faith efforts to comply with the regulation. Therefore, the NRC staff finds that this temporary exemption is acceptable.

IV.

Accordingly, the Commission has determined, pursuant to 10 CFR 50.12(a), that the exemptions as described in Section III: (1) are authorized by law,

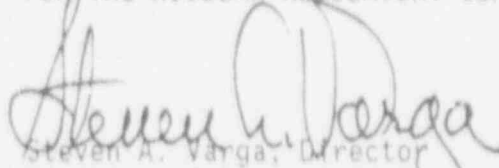
will not present an undue risk to the public health and safety, and are consistent with the common defense and security, and (2) present special circumstances.

Accordingly, the Commission hereby grants the exemptions from the requirements of Sections III.L.1.b, III.L.2.b, III.G.2, III.G.3, III.L, III.J, and III.G.1. as described in Section III.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of these exemptions would have no significant effect on the quality of the human environment (57 FR 40701).

These Exemptions are effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Steven A. Varga, Director
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,
this 10th day of September

defense and security, and meets the special circumstances described in 10 CFR 50.12(a)(2). Therefore, your request for exemptions is granted.

Sincerely,

Original Signed By:
Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - 1/11
Office of Nuclear Reactor Regulation

Enclosure:
Exemptions

cc w/enclosure:
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