

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of
POWER AUTHORITY OF THE STATE
OF NEW YORK
(James A. FitzPatrick Nuclear
Power Plant)

Docket No. 50-333

EXEMPTION

I.

The Power Authority of the State of New York (PASNY/the licensee) is the holder of Facility Operating License No. DPR-59 which authorizes the licensee to operate the James A. FitzPatrick Nuclear Power Plant (the facility) at power levels not in excess of 2436 megawatts thermal. The facility is a boiling water reactor (BWR) located at the licensee's site in Oswego County, New York. The license provides, among other things, that it is subject to all rules, regulations and Orders of the Commission now or hereafter in effect.

II.

Section III.G. of Appendix R to 10 CFR 50 requires that one train of cables and equipment necessary to achieve and maintain safe shutdown be maintained free of fire damage by one of the following means:

- a. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide a fire resistance equivalent to that required of the barrier;
- b. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area, and;

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- c. Enclosure of cables and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

If these conditions are not met, Section III.G.3 requires an alternative shutdown capability independent of the fire area of concern. It also requires that a fixed suppression system be installed in the fire area of concern if it contains a large concentration of cables or other combustibles. These alternative requirements are not deemed to be equivalent. However, they provide equivalent protection for those configurations in which they are accepted.

Because it is not possible to predict the specific conditions under which fires may occur and propagate, the design basis protective features are specified in the rule rather than the design basis fire. Plant specific features may require protection different than the measures specified in Section III.G. In such a case, the licensee must demonstrate, by means of a detailed fire hazards analysis, that existing protection or existing protection in conjunction with proposed modifications will provide a level of safety equivalent to the technical requirements of Section III.G of Appendix R.

In summary, Section III.G is related to fire protection features for ensuring that systems and associated circuits used to achieve and maintain safe shutdown are free of fire damage. Fire protection configurations must either meet the specific requirements of Section III.G, or an alternative fire protection configuration must be justified by a fire hazard analysis.

Our general criteria for accepting an alternative fire protection configuration are the following:

- o The alternative assures that one train of equipment necessary to achieve hot shutdown from either the control room or emergency control stations is free of fire damage.
- o The alternative assures that fire damage to at least one train of equipment necessary to achieve cold shutdown is limited such that it can be repaired within a reasonable time (minor repairs with components stored on-site).
- o Modifications required to meet Section III.G would not enhance fire protection safety above that provided by either existing or proposed alternatives.
- o Modifications required to meet Section III.G would be detrimental to overall facility safety.

By letter dated April 12, 1985, the licensee requested approval for an exemption from the technical requirement of Section III.G.2 of Appendix R to 10 CFR 50 that ventilation penetrations in fire barriers separating redundant shutdown-related systems be provided with fire dampers. Specifically, the dampers to which this Exemption applies are three dampers (73FD-1, 73FD-2, 73FD-3) located in the floor/ceiling assembly between the screenwell house and safety-related pump houses. The licensee's basis for concluding that these dampers are not required is that the fire-related barriers in which they would be installed have been derated because of low combustible fire loading and resulting low fire severity.

We have evaluated the licensee's requested exemption. Since the fire hazard in the screenwell house and both pump houses is minimal because of low combustible loadings, we find that the installation of a damper in each ventilation opening in the associated fire barriers is not necessary to satisfy our fire protection guidelines. A potential concern we considered in our evaluation was the propagation of smoke and hot gases, beyond the room where the fire originates, to redundant shutdown-related systems in

the adjoining rooms. For a fire originating in the screenwell house, it would be necessary, under this scenario, for the fire to propagate vertically downward. Because smoke and heat from a fire tend to rise and spread laterally, we would not expect this to occur. Also, if a fire were to occur in the screenwell house, shutdown could be achieved using systems in either pump house. In addition, due to the absence of fire dampers in the floor/ceiling assembly between each of the pump houses and the screenwell house, products of combustion from a fire originating in either pump house might spread upward into the screenwell house. However, in this case safe shutdown could be achieved using undamaged systems in the redundant pump house which shares no unprotected common boundaries. On these bases, we conclude that fire dampers are not necessary in the floor/ceiling assemblies and that the licensee's alternate fire protection configuration achieves an acceptable level of safety, equivalent to that attained by compliance with Section III.G. Therefore, we find the exemption from the requirement for installing three fire dampers in the floor/ceiling assembly between the screenwell house and safety-related pump rooms to be justified and acceptable.

III.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, this exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. The Commission further determines that special circumstances, as provided in 10 CFR 50.12(a)(2)(ii), are present justifying the exemption, namely that application of the regulation in the particular circumstances

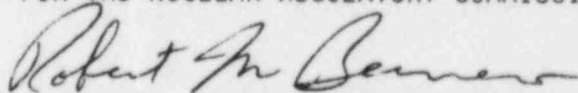
would not serve the underlying purpose of the rule and is not necessary to achieve the underlying purpose of the rule - to ensure the ability to effect safe shutdown of the plant. Safe shutdown could be effected if a fire occurred in the screenwell house or either pump house because a single fire in any one of these areas would not render redundant shutdown systems located in the remaining areas inoperable.

Accordingly, the Commission hereby grants an exemption as described in Section II above from Section III.G.2 of Appendix R to 10 CFR 50 to the extent that the installation of three fire dampers (73FD-1, 73FD-2, 73FD-3) in ventilation penetrations in the floor/ceiling assembly between the screenwell house and safety-related pump houses are not required.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this Exemption will have no significant impact on the environment. (April 29, 1986 51 FR 15982)

This Exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert M. Bernero, Director
Division of BWR Licensing
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 30th day of April 1986.