ATTACHMENT I to JPN-92-058

PROPOSED TECHNICAL SPECIFICATION CHANGES
PRIMARY CONTAINMENT IODINE MONITORING SPECIFICATIONS

(JPTS-91-006)

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
Docket No. 50-333
DPR-59

3.6 4.6 BASES (cont'd)

leakage were also considered in establishing the limits. The behavior of cracks in piping systems has been experimentally and analytically investigated as part of the USAEC-sponsored Reactor Primary Coolant System Rupture Study (the Pipe Rupture Study). Work utilizing the data obtained in this study indicates that leakage from a crack can be detected before the crack grows to a dangerous or critical size by mechanically or thermally induced cyclic loading, or stress corrosion cracking or some other mechanism characterized by gradual crack growth. This evidence suggests that for leakage somewhat greater than the limit specified for unidentified leakage, the probability is small that imperfections or cracks associated with such leakage would grow rapidly. However, the establishment of allowable unidentified leakage greater than that given in 3.6.D on the basis of the data presently available would be premature because of uncertainties associated with the data. For leakage of the order of 5 gpm as specified in 3.6.D, the experimental and analytical data suggest a reasonable margin of safety such that leakage of this magnitude would not result from a crack approaching the critical size for rapid propagation. Leakage less than the magnitude specified can be detected reasonably in a matter of a few hours utilizing the available leakage detection schemes, and if the origin cannot be determined in a reasonably short time, the Plant should be shut down to allow further investigation and corrective action.

The capacity of the drywell sump pumps is 100 gpm, and the capacity of the drywell equipment drain tank pumps is also 100 gpm. Removal of 50 gpm from either of these sumps can be accomplished with considerable margin.

The performance of the Reactor Coolant Leakage Detection System will be evaluated during the first 5 yr of plant operation, and the conclusions of this evaluation will be reported to the NRC.

It is estimated that the main steam line tunnel leakage detectors are capable of detecting a leak on the order of 3,500 lb/hr. The system performance will be evaluated during the first 5 yr of plant operation, and the conclusions of the evaluation will be reported to the NRC.

The reactor coolant leakage detection systems consist of the drywell sump monitoring system and the drywell continuous atmosphere monitoring system. The drywell continuous atmosphere monitoring system utilizes a two-channel monitor to provide information on particulate and noble gas activities in the drywell atmosphere. Two independent and redundant systems are provided to perform this function. This system supplements the drywell sump monitoring system in detecting abnormal leakage that could occur from the reactor coolant system. In the event that the drywell continuous atmosphere monitoring system is inoperable, grab sample will be taken on a periodic basis to monitor drywell activity.

TABLE 4.6-2

Minimum Test and Calibration Frequency for Drywell Continuous Atmosphere Radioactivity Monitoring System

	Inst. Channel	Inst. Functional Test	Calibration	Sensor Check
1.	Air Particle Analyzer	None	Once / 3 mos.	once / day
2.	Gaseous Activity Analyzer	None	Once / 3 mos.	once / day

SAFETY EVALUATION FOR PROPOSED TECHNICAL SPECIFICATION CHANGES PRIMARY CONTAINMENT IODINE MONITORING SPECIFICATIONS (JPTS-91-006)

I. DESCRIPTION OF THE PROPOSED CHANGES

The proposed changes to the James A. FitzPatrick Technical Specifications are addressed below. Minor changes in format, such as type font, margins or hyphenation, are not described in this submittal. These changes are typographical in nature and do not affect the content of the Technical Specifications.

Page 151, Bases 3.6 and 4.6 D

Replace the phrase:

> "three-channel monitor to provide information on particulate, iodine and noble gas activities in the drywell atmosphere."

with

> "two-channel monitor to provide information on particulate and noble gas activities in the drywell atmosphere."

Page 162a, Table 4.6-2

Delete item 3 for iodine analyzer.

II. PURPOSE OF THE PROPOSED CHANGES

The proposed changes remove all references concerning the monitoring of iodine by the drywell Continuous Atmosphere Monitoring (CAM) system.

The drywell CAM system is part of the reactor coolant system leakage detection system incorporating a three-channel combination monitor for counting gross particulate, iodine, and noble gas activities in the drywell atmosphere. The CAM system takes a continuous flow sample and passes it through a shielded assembly containing the detector unit before discharging back into the drywell. Measurements are taken and analyzed to determine if there is abnormal reactor coolant leakage into the drywell.

During the review process in support of replacing the CAM system monitors, the Authority examined the current regulatory requirements for determining reactor coolant leakage into the drywell. These requirements (Reference 1), finalized by the NRC after the installation of the FitzPatrick CAM system, specify two methods for determining the presence of reactor coolant in the drywell and required a third alternative as backup. One method requires the CAM system to monitor for particulates in the drywell atmosphere. The second method requires the monitoring of the sump level and sump flow. The third method, suggested by the NRC staff, is fulfilled by using the CAM system to monitor the gaseous portion of the drywell atmosphere.

In accordance with regulatory criteria, there is no need for monitoring the drywell atmosphere for iodine. Current industry practice (Reference 2) supports this position by requiring CAM systems to monitor particulates and noble gases in conjunction with sump level/flow monitoring. Removing the CAM iodine monitoring function from the Technical Specifications eliminates an unnecessary operational requirement. It simplifies equipment maintenance by not requiring testing, calibration, and repairing of the iodine portion of the CAM system. Future replacement/upgrading of the CAM system will not require the inclusion of an iodine data channel.

III. SAFETY IMPLICATIONS OF THE PROPOSED CHANGES

Regulatory criteria requires three methods for determining the presence of reactor coolant leakage. FitzPatrick's use of a CAM system that monitors both particulate and gaseous radioactivity in the drywell atmosphere fulfills two of the three monitoring requirements. Monitoring for airborne iodine radioactivity by the CAM system is not required to meet regulatory criteria which specifies the use of sump flow/level monitoring as the third monitoring methodology. The presence of the iodine monitoring capability provides an unnecessary redundancy for detecting primary system leakage since any coolant leakage with entrained iodine would also include radioactive particulates and gases. Iodine airborne concentration monitoring does not increase the capability to detect leakage because the ability of iodine to disperse within the containment atmosphere is essentially identical to that of particulates and noble gases. Considering these points the Technical Specification requirement to monitor iodine by the CAM system is excessive and provides no additional safety margin.

The removal of this extra monitoring method will not reduce the plant operator's ability to detect the presence of reactor coolant leakage. Removal of iodine monitoring from the Technical Specifications will not place FitzPatrick in a position of noncompliance with regulatory criteria. The changes do not alter the conclusions of the plant's accident analyses as documented in the FSAR or the NRC staff's SER.

IV. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

Operation of the FitzPatrick plant in accordance with the proposed Amendment would not involve a significant hazards consideration as defined in 10 CFR 50.92, since it would not:

1. involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed changes removes the surveillance requirement for monitoring iodine in the drywell atmosphere from the CAM system. These changes do not reduce the CAM system detection ability below regulatory criteria in determining containment atmospheric contamination from coolant leakage. The changes do not affect the ability of the CAM system in performing its intended function. The probability of a coolant leakage is not increased and the ability of plant personnel and equipment to detect and correct such a leakage is not affected. The

proposed deletion of the iodine portion of the CAM system will not introduce any additional causes for generating reactor coolant leakage.

In addition, there is no credit taken in the existing accident analyses for the use of the CAM system in detecting and preventing the occurrence of a primary coolant boundary failure or for mitigating the effects of the failure. All existing accident analyses resulting in the release of primary coolant into the drywell/suppression chamber ignore the leak before break scenario and assumes boundary failure without CAM detection. Therefore, this proposed amendment does not alter the probability or consequences of any previously evaluated accident.

2. create the possibility of a new or different kind of accident from any accident previously evaluated.

The deletion of an unnecessary instrumentation channel from the technical specification's surveillance requirements and bases will not create a new or different kind of accident. Any coolant leakage with entrained iodine would also include radioactive particulates and gases. Either of these two leakage components would be detected by the remaining CAM channels. The changes do not affect the ability of any system in performing its intended function. There are no equipment, system, or structural modifications associated with these changes. These changes, therefore, do not affect the plant accident analyses as documented in the FSAR or the NRC staff SER.

3. involve a significant reduction in a margin of safety.

The removal of an unnecessary instrument channel from the technical specification's surveillance requirements will not reduce the ability of the operators to detect and respond to a reactor coolant leakage. Monitoring iodine by the CAM system was a redundancy established by the Authority prior to finalization of reactor coolant leakage detection criteria by the NRC staff. Removing the iodine monitoring requirements will, therefore, not place FitzPatrick in a position of noncompliance. Operation of the CAM system without monitoring for iodine will not relax any controls or limitations and will still provide the same level of confidence in detecting a reactor coolant leakage.

V. IMPLEMENTATION OF THE PROPOSED CHANGES

Implementation of the proposed changes removes a redundant monitoring channel originally established for determining reactor coolant leakage. This removal will not affect the Fire Protection or ALARA Programs at the FitzPatrick plant, nor will the change impact the environment.

VI. CONCLUSION

The changes, as proposed, do not constitute an unreviewed safety question as defined in 10 CFR 50.59. That is, they:

1. will not change the probability nor the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Safety Analysis Report;

2. will not increase the possibility of an accident or malfunction of a type different from any previously evaluated in the Safety Analysis Report;

3. will not reduce the margin of safety as defined in the basis for any technical specification; and

4. involve no significant hazards consideration, as defined in 10 CFR 50.92.

VII. REFERENCES

1. NRC Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems", dated May 1973.

2. NRC NUREG-0123, "Standard Technical Specifications for General Electric Boiling Water Reactors (BWR/5)," Revision 3, dated Fall 1980.

3. James A. FitzPatrick Nuclear Power Plant Updated Final Safety Analysis Report, Section 4.10.3.4, "Leakage Detection System," through Revision 5, dated January 1992.

4. James A. FitzPatrick Nuclear Power Plant Safety Evaluation Report (SER), dated November 20, 1972.

5. James A. FitzPatrick Nuclear Power Plant Safety Evaluation Report Supplement No. 1, dated February 1, 1973.

6. James A. FitzPatrick Nuclear Power Plant Safety Evaluation Report Supplement No. 2, dated October 4, 1974.

ATTACHMENT III to JPN-92-058

PROPOSED TECHNICAL SPECIFICATION CHANGES
PRIMARY CONTAINMENT IODINE MONITORING SPECIFICATIONS
MARKUP OF TECHNICAL SPECIFICATION PAGES

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Replace with Insert "A"

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3. Iodine Analyzer	None	Once/3 mos.	once/day

Amendment No. 289

INSERT "A"

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