



April 18, 1991  
JPN-91-014

U.S. Nuclear Regulatory Commission  
Mail Station P1-137  
Washington, D.C. 20555

ATTENTION: Document Control Desk

SUBJECT: James A. FitzPatrick Nuclear Power Plant  
Docket No. 50-333  
**Request for Additional Information -**  
**Accident Monitoring Instrumentation Amendment (JPTS-89-015)**

- REFERENCES: 1. NYPA letter, J. C. Brons to the NRC, dated May 30, 1990 (JPN-90-042), "Proposed Change to the Technical Specifications Regarding Accident Monitoring Instrumentation (JPTS-89-015)."
2. NRC letter, D. E. LaBarge to J. C. Brons, dated September 18, 1990, "Request for Additional Information - Accident Monitoring Instrumentation Amendment."

Dear Sir:

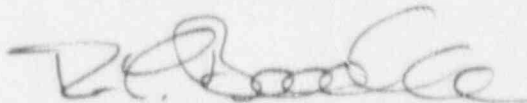
The New York Power Authority applied for an amendment to the accident monitoring instrumentation requirements contained in the FitzPatrick Technical Specifications in Reference 1. The change proposed to update the Technical Specifications to reflect the installation of new Regulatory Guide 1.97 post-accident monitoring instruments. During the NRC staff's review of this amendment application, they identified additional information needed to complete the review. The staff requested in Reference 2 that the Authority provide this information.

Attachment I to this letter contains the Authority's response to this request for information. Also included in Attachment I is a description of several revisions to the amendment application. Attachment II contains seven revised Technical Specification pages which reflect these changes and resolves the NRC's concerns identified in Reference 2. These pages should be substituted into the set of revised Technical Specification pages contained in Attachment I to Reference 1.

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If you have any questions, please contact Mr. J. A. Gray, Jr.

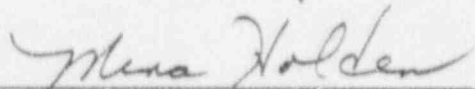
Very truly yours,



Ralph E. Beedle  
Executive Vice President  
Nuclear Generation

STATE OF NEW YORK  
COUNTY OF WESTCHESTER

Subscribed and sworn to before me  
this 18th day of April 1991.



Notary Public

MINA HOLDEN  
NOTARY PUBLIC, State of New York  
Westchester County  
No. 4829150  
My Commission Expires Aug. 31, 1991

att: as stated

cc: Regional Administrator  
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ATTACHMENT I TO JPN-91-014

**REQUEST FOR ADDITIONAL INFORMATION  
ACCIDENT MONITORING INSTRUMENTATION AMENDMENT**

**(JPTS-89-015)**

**New York Power Authority**  
**JAMES A. FITZPATRICK NUCLEAR POWER PLANT**  
**Docket No. 50-333**



**ACCIDENT MONITORING INSTRUMENTATION (JPTS-89-015)**

This attachment responds to the NRC's request for additional information (Reference 2) concerning the Authority's application for an amendment to the FitzPatrick Technical Specifications (Reference 1). The proposed amendment revises the instrumentation requirements associated with accident monitoring. The individual NRC questions are repeated followed by the Authority's reply. Following this discussion is notification of minor changes to the Authority's application.

**Background**

The original FitzPatrick plant design included instrumentation to provide control room indication. These instruments do not have safety related control or trip functions. Technical Specification (TS) requirements were applied to a selected group of these instruments listed in Table 3.2-6 based upon the operator's need to have a reliable source of information concerning plant status. The TS Bases do not state the basis for the selection of the specific plant parameters. However, this table is similar to the TS of nuclear power plants similar in design to the FitzPatrick plant, and reflects good engineering practice.

Since the Three Mile Island event, the NRC and industry have made a significant effort to identify the relative importance of plant parameter information needed by operators during accidents. This resulted in the various categories of plant parameters published in the NRC's Regulatory Guide (RG) 1.97. Category A is assigned to the plant parameters that "... provide primary information needed to permit the control room operating personnel to take the specified manually controlled actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions..." Modifications to the FitzPatrick plant upgraded the instrumentation which monitors these Category A parameters. The Authority then proposed Technical Specification requirements for the Category A accident monitoring instrumentation in Table 3.2-8 to replace Table 3.2-6.

The proposed Table 3.2-8 is very similar to the existing Table 3.2-6. Both tables place operational requirements on instruments which provide control room indication, and most of the plant parameters listed in the two tables are identical. However the purpose of the new table is different. Table 3.2-6 provided TS requirements for instruments used in the day-to-day operation of the FitzPatrick plant, whereas the proposed Table 3.2-8 provides TS requirements for the instrumentation to be used under accident conditions. One exception concerns the Containment High Range Radiation Monitor. This instrument has an isolation function as well as control room indication. The parameters selected and the design of the instrumentation in the proposed table are a result of a documented and approved methodology, not engineering judgement. The Authority's intent in the proposed amendment is to replace the existing judgement based Table 3.2-6 with the new RG 1.97 based Table 3.2-8.

As noted above, many of the RG 1.97 Category A plant parameters were already listed on Table 3.2-6. However, the proposed Table 3.2-8 actually reflects many new or upgraded instruments, not the ones covered by the existing Table 3.2-6. The LCO's, action statements, and surveillance requirements in the proposed Table 3.2-8 reflect the design of the new instrumentation system and current standards reflected in RG 1.97 and the STS. The new specifications apply to mostly new instruments, not revised requirements for old instruments.

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The Authority believes that the relationship between the two tables is the primary source of the NRC's questions. Therefore, the responses to many of the individual questions will reference information provided above.

**Response to Individual Requests for Information**

**NRC Question**

1. The proposed submittal would add the requirement to Specification 3.2.H that the instrumentation in Table 3.2-8 "must be operable whenever the reactor is critical and reactor coolant temperature is greater than or equal to 212°F." Please address the following concerns related to this proposed change:
  - a. For all of the instruments in Table 3.2-8, the proposed change to Specification 3.2.H seems to imply that both conditions of coolant temperature and reactor criticality must be in effect before the instrumentation is required to be operable. However, this is inconsistent with the requirements of primary containment integrity Specification 3.7.A.2, which states that the existence of either condition requires that primary containment integrity be in effect. Since many of the instruments are associated with monitoring of the primary containment, Specification 3.7.A.2 would seem to form the basis for the operability requirements for the instruments associated with the primary containment in the proposed change.

**NYPA Response**

The existing TS 3.2.F, 3.2.H, and Tables 3.2.6, "Surveillance Instrumentation" and 3.2.8, "Accident Monitoring Instrumentation" do not specify the plant conditions under which the instruments are required to be operable. In practice, these instruments have been considered part of the monitored system and were to be operable whenever the monitored system was operable. The Authority proposed to revise TS 3.2.H to provide uniform operability requirements for all accident monitoring instrumentation. This change would be an additional constraint added to the TS.

Technical Specification 1.0.J defines operable to include "... all necessary attendant instrumentation ... that are required for the system to perform its function(s) are also capable of performing their related support functions(s)." From this definition, only those instruments necessary for the primary containment to perform its function are required to be operable whenever primary containment integrity is required. Table 3.2-1, "Instrumentation that Initiates Primary Containment Isolation," contains those instruments which are required for the containment isolation system to perform its function. In addition, containment integrity requirements also include items such as closure of hatches, blind flanges, etc., which have no associated instrumentation.

The proposed Table 3.2-8 instrumentation provides indication only, and even when inoperable, does not prevent the containment isolation system from performing its function nor affects containment integrity. The instrumentation on Table 3.2-8 is intended to provide accident monitoring information, not system operability. Therefore, TS 3.7.A.2 does not provide the basis for the operability requirements for the Table 3.2-8 accident monitoring instrumentation.

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To clarify the distinction between the operability requirements for primary containment isolation instrumentation and accident monitoring instrumentation, the Authority is relocating the accident monitoring instrumentation operability requirement from Specification 3.2.H to Table 3.2-8. A new column, titled "Mode in Which Instrumentation Must be Operable" is added to the table. In this column will be a reference to either Note H or J for each instrument. These notes specify that all accident monitoring instrumentation must be operable whenever the reactor is in the Startup/Hot Standby or Run mode. In addition, the Containment High Range Radiation Monitor, Turbine Building, Radwaste Building, and Stack High Range Effluent Monitors must also be operable in the Hot Shutdown mode.

These conditions are more restrictive than those originally proposed by the Authority and those suggested in the NRC's Request for Additional Information. These conditions more closely parallel the "Applicable Operational Conditions" of STS Table 3.3.7.5-1 and the TS of other BWRs. Revised pages 54, 77a, 77b, 77c, and 77d are included in Attachment II.

NRC Question

- 1.b. The proposed change does not include the primary containment integrity requirement of Specification 3.7.A.2 concerning fuel in the reactor vessel.

NYPA Response

Instrumentation necessary to initiate containment isolation are contained in TS Table 3.2-1. Note 1 to this table requires this instrumentation to be operable whenever the primary containment is required according to Section 3.7. See the Authority's response to 1.a above.

NRC Question

- 1.c. The proposed change to Table 3.2-8 would add certain Residual Heat Removal (RHR) system, RHR Service Water, and Core Spray (CS) system instruments. However, the proposed changes to Specification 3.2.H and to Table 3.2-8 do not recognize the operability requirements of the RHR and the CS systems of Specification 3.5.A or the definition of "Operable" stated in Specification 1.0.J.

NYPA Response

Operability requirements for the Core Spray and Residual Heat Removal systems are contained in TS 3.5.A.1 and 3.5.A.3 respectively. The instrumentation required for these systems to be operable as defined in TS 1.0.J are contained in TS Table 3.2-2, "Instrumentation that Initiates or Controls the Core and Containment Cooling Systems."

The proposed Table 3.2-8 provides post accident monitoring instrumentation requirements, not ECCS system operability requirements. As defined in RG 1.97, the purpose of accident monitoring instruments is to "provide primary information needed to permit the control room operating personnel to take the specified manually controlled actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for design basis accident events." The accident monitoring instrumentation provides indication only, and even when inoperable, does not prevent the monitored ECCS system from performing its function. These post-accident qualified instruments are not a prerequisite for system operability. Therefore, these instruments do not have to be operable whenever the monitored ECCS system is operable.



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NRC Question

2. The present TS Table 3.2-6 indicates that the number of reactor pressure channels provided by design is three and that the minimum number of operable instrument channels is two. The proposal would move this parameter to Table 3.2-8 and would indicate that only two channels are provided by design and that the minimum number required would be one. This change to the number of channels is not discussed in the submittal.

NYPA Response

The NRC provided guidance in RG 1.97, position C.1.3.1.b and in STS Table 3.3.7.5-1 for the number of reactor pressure accident monitoring instrument channels. Two reactor pressure instrument channels are specified by both of these documents. Therefore, the Authority installed two new post-accident qualified reactor pressure instruments as reflected in the proposed TS. The three reactor pressure instruments contained in Table 3.2-6 are not post-accident qualified and are not included in Table 3.2-8.

The proposed TS places operability requirements on the RG 1.97 post-accident qualified instrumentation regardless of the number of non-qualified instruments already installed. Therefore, there can be differences between the two tables with respect to the number of installed instruments for any given plant parameter. Reduction in the number of reactor pressure instrument channels specified by the TS does not reduce the level of safety afforded by the FitzPatrick plant. Instead, plant safety is enhanced because TS are being applied to instruments qualified for post-accident conditions.

NRC Question

3. There appears to be no justification supplied for the significant differences between the Action Statement in the present TS and that shown in the submittal, for the following parameters:
- a. Torus Water Level
  - b. Reactor Water Level (wide range)
  - c. Reactor Water Level (fuel zone)
  - d. Reactor Vessel Pressure
  - e. Torus Water Temperature
  - f. Drywell Temperature
  - g. Drywell/Torus Differential Pressure

Please ensure that for every change that is proposed in the submittal, a corresponding explanation is provided.

NYPA Response

As stated in Section III of the application safety evaluation, "The ... action statements in revised Table 3.2-8 were selected based upon the redundancy in the design of the instrumentation system. This is consistent with the operability requirements for other post-accident instrumentation at the FitzPatrick plant." Although these action statements may be

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different from those in the existing Table 3.2-6, they are also applied to different instruments and serve a different purpose.

The bases for the proposed action statements include:

- A prior, similar TS change (Amendment 130);
- Other TS action statements for items of similar safety significance;
- The redundancy and expected reliability of the accident monitoring instrumentation design;
- The normal operational status of the instrument and the monitored parameter;
- The availability of many non post-accident qualified instruments which monitor the same plant parameters;
- These instruments do not provide any control functions; and
- Guidance from STS Table 3.3.7.5-1 and other BWR plants TS.

These bases apply to all plant parameters monitored in the proposed Table 3.2-8. Note also that the action statements apply only to indicators, not to the monitored plant parameters. Therefore, the proposed action statements are reasonable and appropriate.

NRC Question

4. The present TS Table 3.2-6 contains the Suppression Chamber Water Level (Wide Range) instrument. However, the wide range instrument is not indicated in the proposed TS change and there is no explanation for its deletion.

NYPA Response

Suppression Chamber Water Level (Wide Range) is included in the proposed Table 3.2-8 as Item 8. It is labeled "Torus Water Level." It is the wide range instrument since it has a span of 25.7 feet. The Authority will identify this instrument better in Tables 3.2-8 and 4.2-8 by renaming it "Torus Water Level (wide range)." Revised pages 77b and 86 are enclosed in Attachment II.

NRC Question

5. To be consistent with other applications of the term, a "/" should be placed between "Safety" and "Relief" shown on TS page 77d in the submittal.

NYPA Response

The Authority agrees with the NRC staff and is enclosing a revised page 77d in Attachment II.

NRC Question

6. The submittal describes deletion of Table 4.2-6 from the TS, which is on page 84 of the present TS and moves the "NOTES FOR TABLES 4.2-1 THROUGH 4.2-5" onto page 84. The result is that there is no page to show that Table 4.2-6 is intentionally blank, as was done on the new page 76 for deletion of Table 3.2-6. Thus, the numbering sequence of the tables would go from 4.2-5 to 4.2-7.



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NYPA Response

The Authority proposed to amend the "List of Tables" to show that both Tables 3.2-6 and 4.2-6 are deleted and there is no corresponding page for the now nonexistent Table 4.2-6. The Authority's practice of amending a page with "This Page is Intentionally Blank" when the entire contents of that page is deleted is only to maintain page numbering consistency within the TS. Such was the case for the deletion of Table 3.2-6. Otherwise the page is removed or reused, and no reference is made to what had formerly been on that page. In the case of the deleted Table 4.2-6, there is no need to retain a blank page for page numbering consistency. Since no TS will refer the reader to the deleted table, there is no need to identify its former location within the TS. The Authority acknowledges that the sequence of tables within the TS will go from 4.2-5 to 4.2-7.

Additional Changes

The Authority is proposing the following minor Technical Specification changes in addition to those discussed above. After the original amendment application was submitted, the Authority identified a typographical error in one instrument ID number. Item 20 of Table 3.2-8 should refer to instrument 23LI-201A rather than 27LI-201A. Item 9 of Tables 3.2-8 and 4.2-8 is being revised from "Torus Water Temperature" to "Torus Bulk Water Temperature" to more accurately describe this instrument's function. The entries in the Table 3.2-8 "Action" column are being prefaced with the word "Note." In addition, the Table 4.2-8 column heading "Check" is being renamed "Instrument Check" to be consistent with the existing Table 4.2-8. The revised pages in Attachment II reflect these changes.

References

1. NYPA letter, J. C. Brons to the NRC, dated May 30, 1990 (JPN-90-042), "Proposed change to the Technical Specifications Regarding Accident Monitoring Instrumentation (JPTS-89-015)."
2. NRC letter, D. E. LaBarge to J. C. Brons, dated September 18, 1990, "Request for Additional Information - Accident Monitoring Instrumentation Amendment."