123 Main Street
White Plains, New York 10601
914 681.6950
914 287.3309 (Fax)

NewYorkPower Authority

James Knubel
Senior Vice President and
Chief Nuclear Officer

September 7, 2000
IPN-00-063

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Proposed Change to the Technical Specifications
Regarding Revised Main Feedwater Isolation Design

Reference: 1. Letter IPN-00-008, "Proposed Change to the Technical Specification Regarding Revised Main Steam Line Break Accident," dated February 4, 2000.

Dear Sir:

This application for an amendment to Indian Point 3 Technical Specifications (TS) proposes to revise TS to reflect a modification planned for refueling outage (RO) 11, scheduled to begin in May of 2001. The modification will automatically close, on a safety injection signal, the existing main feedwater inlet isolation valves (MFIIVs) and the main feedwater low flow bypass inlet isolation valves. This will isolate the feedwater lines as close as feasible to the Main Feedwater Regulation valves (MFRVs) for a postulated main steam line break inside containment in order to limit the feedwater available to a faulted steam generator. The proposed TS change will add a new LCO 3.4.A(8), revise the existing action statement in TS 3.4.B and add a new surveillance section 4.12. This will provide TS control over the revised design.

A TS change proposed in February of this year (Reference 1) will add requirements necessary to meet analytical assumptions for the main steam line break until the planned modification during RO 11. The Authority plans to revise this submittal after that TS change is approved to remove certain requirements that the planned modification will make unnecessary.

The signed original of the Application for Amendment to the Operating License is enclosed for filing. Attachment I contains the proposed new TS pages and Attachment II is the Safety Evaluation for the proposed changes. A markup of the affected TS pages is included as Attachment III. A markup to show the effects on the Improved Technical Specification pages, which are currently under review by the NRC, is included as Attachment IV.

A copy of this application and the associated attachments are being submitted to the designated New York State official in accordance with 10 CFR 50.91.

A001

There are no new commitments made by the Authority in this letter. To support our outage schedule, we request that this amendment be approved by April 1, 2001 with an effective date of prior to startup from RO 11. If you have any questions, please contact Ms. C. D. Faison.

Very truly yours,

J. Knubel
Senior Vice President and
Chief Nuclear Officer

Attachments

cc: U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Resident Inspector's Office
Indian Point Unit 3
U.S. Nuclear Regulatory Commission
P.O. Box 337
Buchanan, NY 10511

Mr. William Valentino
New York State Energy Research
and Development Authority
Corporate Plaza West
286 Washington Avenue Extension
Albany, NY 12203-6399

Mr. George F. Wunder, Project Manager
Project Directorate I-1
Division of Reactor Projects I/II
U.S. Nuclear Regulatory Commission
Mail Stop 14 B2
Washington, DC 20555

BEFORE THE UNITED STATES
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
POWER AUTHORITY OF THE STATE OF NEW YORK	)	**Docket No. 50-286**
Indian Point 3 Nuclear Power Plant	)	

APPLICATION FOR AMENDMENT TO THE OPERATING LICENSE

Pursuant to Section 50.90 of the regulations of the Nuclear Regulatory Commission, the Power Authority of the State of New York, as holder of the Facility Operating License No. DPR-64, hereby applies for an amendment to the Technical Specifications contained in Appendix A of the license.

This application for an amendment to Indian Point 3 Technical Specifications (TS) proposes to revise TS to reflect a modification planned for refueling outage (RO) 11, scheduled to begin May 11, 2001. The modification will automatically close, on a safety injection signal, the existing main feedwater inlet isolation valves (MFIIVs) and the main feedwater low flow bypass inlet isolation valves. This will isolate the feedwater lines as close as feasible to the Main Feedwater Regulation valves (MFRVs) for a postulated main steam line break inside containment in order to limit the feedwater available to a faulted steam generator. The proposed TS change will add a new LCO 3.4.A(8), revise the existing action statement in TS 3.4.B and add a new surveillance section 4.12. This will provide TS control over the revised design.

The signed original of the Application for Amendment to the Operating License is enclosed for filing. Attachment I contains the proposed new TS pages and Attachment II is the Safety Evaluation for the proposed changes. A markup of the affected TS pages is included as Attachment III. A markup to show the effects on the Improved Technical Specification pages is included as Attachment IV.

POWER AUTHORITY OF THE
STATE OF NEW YORK

J. Knubel
Senior Vice President and
Chief Nuclear Officer

STATE OF NEW YORK
COUNTY OF WESTCHESTER
Subscribed and sworn to before me
this 7th day of Sept. 2000.

Notary Public

EILEEN E. O'CONNOR
Notary Public, State of New York
No. 4991062
Qualified in Westchester County
Commission Expires January 21, 2002

ATTACHMENT I TO IPN-00-063

PROPOSED TECHNICAL SPECIFICATION CHANGE

REGARDING REVISED MAIN FEEDWATER ISOLATION DESIGN

Revise Appendix A as follows:

Remove Page	Insert Page
v	v
3.4-2	3.4-2
3.4-3	3.4-3
4.12-1	4.12-1

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

Section	Title	Page
4.12	Main Feedwater Isolation	4.12-1
4.13	Containment Vent and Purge System	4.13-1
4.13A	Isolation Valves	4.13-1
4.13B	HEPA Filters and Charcoal absorbers	4.13-1
5	Design Features	5.1-1
5.1	Site	5.1-1
5.2	Containment	5.2-1
5.2.A	Reactor Containment	5.2-1
5.2.B	Penetrations	5.2-1
5.2.C	Containment Systems	5.2-2
5.3	Reactor	5.3-1
5.3.A	Reactor Core	5.3-1
5.3.B	Reactor Coolant System	5.3-2
6	Administrative Controls	6-1
6.1	Responsibility	6-1
6.2	Organization	6-1
6.2.1	Facility Management and Technical Support	6-1
6.2.2	Plant Staff	6-2
6.3	Plant Staff Qualifications	6-5
6.4	Training	6-5
6.5	Review and Audit	6-5
6.5.0	Review and Approval of Programs and Procedures	6-5

Amendment No. ~~6, 10, 11, 83, 91, 101, 116, 159~~,

(7) City water system piping and valves directly associated with providing backup supply to the auxiliary feedwater pumps are operable.

(8) Main Feedwater Regulation Valves (MFRVs), MF low flow bypass valves, Main Feedwater Inlet Isolation Valves (MFIIVs), and main feedwater (MF) low flow bypass inlet isolation valves shall be operable except when each main feed and bypass line is isolated by a closed and de-activated motor/air operated valve or isolated by a closed manual valve.

B. Except as modified by E. below, if during power operations any of the conditions of 3.4-A above, except Items (1), (2) and (8), cannot be met within 48 hours, the operator shall start to shutdown and cool the reactor below 350°F using normal operation procedures.

If any valve required to be operable by item (8) is inoperable, close or isolate the inoperable valve within 72 hours and verify the valve is closed or isolated once per 7 days. This action for Item (8) is allowed for each valve except, if two valves in series in the same flow path are inoperable then isolate the affected flow path within 8 hours. If the actions for Item (8) are not taken within the required time, bring the reactor subcritical ($K_{eff} < 0.99$) within 6 hours after the completion time or action is not met and reduce average reactor coolant temperature to less than 350°F within an additional 6 hours.

C. If during power operations, the requirement of 3.4.A.2 is not satisfied, the following actions shall be taken:

1) With one auxiliary feedwater pump inoperable, restore the pump to operable status within 72 hours or be in hot shutdown within the next 12 hours.

2) With two auxiliary feedwater pumps inoperable, be in hot shutdown within 12 hours.

3) With three auxiliary feedwater pumps inoperable, maintain the plant in safe stable mode which minimizes the potential for a reactor trip and, immediately initiate corrective action to restore at least one auxiliary feedwater pump to operable status as soon as possible.

D. The gross turbine-generator electrical output at all times shall be within the limitation of Figure 3.4-1 or Figure 3.4-2 for the application conditions of turbine overspeed setpoint, number of operable low pressure steam dump lines, and condenser back pressure as noted thereon.

E. The reactor shall not be heated above 350°F unless both valves in the single auxiliary feedwater supply line from the Condensate Storage Tank are open. If, during power operations, it is discovered that one or both of the valves are closed, the following action shall be taken:

1) Immediately place the auxiliary feedwater system in the manual mode,

2) Within one hour either:

a) reopen the closed valve(s),

or

b) open the valves to the alternate city water supply,

Amendment No. ~~36, 91, 92~~,

and

3) Once a water supply has been restored, return the system to the automatic mode.

If the above action cannot be taken, then:

a) maintain the plant in a safe stable mode which minimizes the potential for a reactor trip,

and

b) continue efforts to restore water supply to the auxiliary feedwater system,

and

c) notify the NRC within 24 hours regarding planned corrective action.

Basis

A reactor shutdown from power requires removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condensers. Thereafter, core decay heat can be continuously dissipated via the steam bypass to the condenser as feedwater in the steam generator is converted to steam by heat absorption. Normally, the capability to feed the steam generators is provided by operation of the turbine cycle feedwater system.

The twenty main steam safety valves have a total combined rated capability of 15,108,000 lbs/hr. The total full power steam flow is 12,974,500 lbs/hr.; therefore twenty (20) main steam safety valves will be able to relieve the total steam flow if necessary. The total relieving capacity of the twenty main steam line safety valves is 116% of the total secondary steam flow at 100% rated power (3025 Mwt). The specified valve lift settings and relieving capacities are in accordance with the requirements of Section III of the ASME Boiler and Pressure Code, 1971 Edition. The operability of the twenty main steam line safety valves ensure that the secondary system pressure will be limited to within 110% of the design pressure of 1085 psig during the most severe anticipated system operational transient.

Startup and/or power operation with inoperable main steam line safety valves is allowable within the limitation of Table 3.4-1. Operation with up to three of the five main steam line safety valves per steam generator inoperable is permissible if the maximum allowed power level is below the heat removing capability of the operable MSSVs. This is accomplished by restricting the reactor power level such that the heat input from the primary side will not exceed the heat removing capability of the operable MSSVs of the most limiting steam generator. The reduction in reactor power level is achieved by reducing the power range neutron flux high setpoint. The reactor trip setpoint reductions are derived on the following basis:

$$Hi\phi = (100 / Q) [(w_s h_{fg} N) / K]$$

Amendment No. ~~91, 92, 151~~,

4.12 MAIN FEEDWATER ISOLATION

Applicability

Applies to the periodic testing requirements of the Main Feedwater Regulation Valves (MFRVs), MF low flow bypass valves, Main Feedwater Inlet Isolation Valves (MFIIVs), and main feedwater (MF) low flow bypass inlet isolation valves.

Objective

To verify the operability of the valves used to isolate main feedwater following a safety injection signal.

Specification

Verify, at a frequency in accordance with the Inservice Testing Program, each MFRV, MF low flow bypass valve, MFIIV and MF low flow bypass inlet isolation valve closes on an actual or simulated actuation signal within the following time limits:

a.	MFRV closure time	≤ 10 seconds
b.	MF low flow bypass closure time	≤ 10 seconds
c.	MFIIV closure time	≤ 120 seconds
d.	MF low flow bypass inlet isolation closure time	≤ 120 seconds

Basis

The testing of the main feedwater valves will verify their operability. Their operability is necessary for main feedwater isolation on a safety injection signal to stop excessive flow of feedwater into the steam generator. The time limits are based on closure times assumed in the main steam line break analysis. Valve closure must meet these time limits. If relay actuation and diesel generator loading are not separately considered in the analysis, then these times must be added to the valve closure time when meeting the specified closure times. This is necessary to mitigate the effects of excessive cooldown and the continued addition of mass and energy to the containment following a main steam line break inside containment.

Amendment No. ~~10, 45, 146, 157~~,

ATTACHMENT II TO IPN-00-063

SAFETY EVALUATION OF

PROPOSED TECHNICAL SPECIFICATION CHANGE

REGARDING REVISED MAIN FEEDWATER ISOLATION DESIGN

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

I. DESCRIPTION

This section provides a description of the proposed changes to the Indian Point 3 Technical Specifications (TS). Minor changes in format, such as type font, margins or hyphenation, are not described in this submittal. The proposed TS changes add requirements for the operability of valves used to isolate main feedwater following a main steam line break inside containment, add action statements to be followed if those valves become inoperable and add surveillance requirements for those valves. The specific changes are as follows:

1. TS 3.4.A, Page 3.4-2

   Add:

   (8) Main Feedwater Regulation Valves (MFRVs), MF low flow bypass valves, Main Feedwater Inlet Isolation Valves (MFIIVs), and main feedwater (MF) low flow bypass inlet isolation valves shall be operable except when each main feed and bypass line is isolated by a closed and de-activated motor/air operated valve or isolated by a closed manual valve.

2. TS 3.4.B, Page 3.4-2

   Replace:

   "Except as modified by E. below, if during power operations any of the conditions of 3.4-A above, except Items (1) and (2), cannot be met within 48 hours, the operator shall start to shutdown and cool the reactor below 350°F using normal operation procedures."

   With:

   "Except as modified by E. below, if during power operations any of the conditions of 3.4-A above, except Items (1), (2) and (8), cannot be met within 48 hours, the operator shall start to shutdown and cool the reactor below 350°F using normal operation procedures.

   If any valve required to be operable by item (8) is inoperable, close or isolate the inoperable valve within 72 hours and verify the valve is closed or isolated once per 7 days. This action for Item (8) is allowed for each valve except, if two valves in series in the same flow path are inoperable then isolate the affected flow path within 8 hours. If the actions for Item (8) are not taken within the required time, bring the reactor subcritical ($K_{eff} < 0.99$) within 6 hours after the completion time or action is not met and reduce average reactor coolant temperature to less than 350°F within an additional 6 hours."

3. TS 4.12, Page 4.12-1

Replace:

"Section 4.12 FIRE PROTECTION AND DETECTION SYSTEMS has been deleted"

With:

"4.12 MAIN FEEDWATER ISOLATION

Applicability

Applies to the periodic testing requirements of the Main Feedwater Regulation Valves (MFRVs), MF low flow bypass valves, Main Feedwater Inlet Isolation Valves (MFIIVs), and main feedwater (MF) low flow bypass inlet isolation valves.

Objective

To verify the operability of the valves used to isolate main feedwater following a safety injection signal.

Specification

Verify, at a frequency in accordance with the Inservice Testing Program, each MFRV, MF low flow bypass valve, MFIIV and MF low flow bypass inlet isolation valve closes on an actual or simulated actuation signal within the following time limits:

a.	MFRV closure time	≤ 10 seconds
b.	MF low flow bypass closure time	≤ 10 seconds
c.	MFIIV closure time	≤ 120 seconds
d.	MF low flow bypass inlet isolation closure time	≤ 120 seconds

Basis

The testing of the main feedwater valves will verify their operability. Their operability is necessary for main feedwater isolation on a safety injection signal to stop excessive flow of feedwater into the steam generator. The time limits are based on closure times assumed in the main steam line break analysis. Valve closure must meet these time limits. If relay actuation and diesel generator loading are not separately considered in the analysis, then these times must be added to the valve closure time when meeting the specified closure times. This is necessary to mitigate the effects of excessive cooldown and the continued addition of mass and energy to the containment following a main steam line break inside containment."

4. TS Table of Contents, Page v

Replace:

"4.12	Fire Protection and Detection Systems	4.12-1
4.12.A	High Pressure Water Fire Protection System Testing	4.12-1
4.12.B	Electrical Tunnel, Diesel Generator building and Containment Fan Cooler Fire Protection Spray And/or Sprinkler System Testing	4.12-3
4.12.C	Penetration Fire Barrier Inspection.	4.12-4
4.12.D	Fire Detection Systems Testing	4.12-4
4.12.E	Fire Hose Stations Testing	4.12-5
4.12.F	Yard Hydrants and Hydrant Hose House Inspection	4.12-6
4.12.G	CO2 Fire Protection System	4.12-6"

With:

"4.12	Main Feedwater Isolation	4.12-1"

II. PURPOSE OF PROPOSED CHANGE

The purpose of the proposed TS changes is to revise the TS to reflect a planned modification to automatically isolate main feedwater on a safety injection signal using the motor operated Main Feedwater Inlet Isolation Valves (MFIIVs) and MF low flow bypass inlet isolation valves. The current design isolates main feedwater on a safety injection signal using the Main Boiler Feedpump Discharge Valves (MBFPDVs), the Main Feedwater Regulation Valves (MFRVs), and MF low flow bypass valves. The modification is planned in order to eliminate a large volume of water that would feed a faulted steam generator if a MFRV and associated bypass valve failed to close following a main steam line break inside containment. LER 99-008 (Reference 1) identified a deficiency in prior analyses of the main steam line break inside containment that required the analysts to take credit for boron in the safety injection lines and a reduction in shutdown margin. NYPA submitted a TS change (Reference 2) to reflect the changed assumptions for the main steam line break. The planned modification will eliminate the need for the TS proposed in Reference 2 (i.e., a limiting condition for operation and associated action statements to TS 3.3.A for boron in safety injection line, a surveillance test to Table 4.1-2 to verify the presence of boron, and a change to the non-conservative shutdown reactivity requirement in TS 3.10.1.1). The Authority plans to revise this submittal after that TS change is approved to remove requirements that the planned modification will make unnecessary for the next operating cycle. The planned modification will also modify the proposed Improved Technical Specifications submitted for Indian Point 3 since they add requirements for feedwater isolation valves. Attachment IV identifies those changes.

This TS change is requested with an implementation date of "prior to startup from refueling outage (RO) 11" (scheduled to begin in May of 2001). That is the planned time of the modification and the TS change is required for startup from RO 11 since the core reload evaluation will assume that the modification has been completed.

III. SAFETY IMPLICATIONS OF THE PROPOSED CHANGES

The proposed changes to the TS are to reflect a planned modification. The safety implications of the planned modification and the associated TS change are assessed in this safety evaluation.

The planned modification will meet current design requirements for feedwater isolation while eliminating the feedwater available to a faulted generator after isolation for the main steam line break inside containment. The modification is not credited for feedwater isolation for a main steam line break outside containment. Current plant design relies upon the MFRVs and the associated bypass valves to close following a main steam line break inside containment. If the MFRV fails to close, current plant design relies upon the MBFPDVs to close. Current design requires the MFRVs and associated bypass valves to close in 10 seconds or less and the MBFPDVs to close in 120 seconds or less. The planned modification will not remove the safety injection signal from the MBFPDVs but closure will no longer be included in the analysis. A separate safety injection signal will be added to the MFIIVs and associated bypass valves. Closure of the MFIIVs and associated bypass valves in 120 seconds or less will perform the isolation function while eliminating the large volume of water between the MBFPDVs and the MFIIVs and associated bypass valves as a source of feed for the faulted steam generator. The core load analysis for the cycle following RO 11 will assume that this water volume is not available and demonstrate that the plant need not consider boron in the safety injection lines and that a shutdown margin of 1.3% is acceptable whenever the average reactor coolant temperature exceeds 200°F. These were changes made in the core reload analysis for RO 10 to accommodate the volume of water between the MBFPDVs and the MFRVs and associated bypass valves. The proposed modification and associated TS change will not increase the consequences of a postulated accident or reduce the margin of safety since the modification will restore plant conditions assumed in the main steam line break inside containment to those previously used to evaluate the plant and add TS requirements for feedwater isolation.

The planned modification will meet the functional design criteria that the MBFPDVs meet to assure that the consequences of the steam line break accident do not increase and to assure that no new or different kind of accident can be created. The MFIIVs (valves BFD-5-1, 2, 3, and 4) and the MF low flow bypass inlet isolation valves (valves BFD-90-1, 2, 3 and 4) and the valve operators will remain non-safety grade. This is an acceptable design practice because it represents the current licensing basis for IP3 and has been generically accepted by the NRC in NUREG 0800 (Reference 3). The motor operators for the MFIIVs and the MF low flow bypass inlet isolation valves will be added to the Generic Letter 89-10 program for motor operated valves in order to assure proper operation. The motor operators will be evaluated, upgraded as necessary to meet the requirements of the 89-10 program, and tested in accordance with the requirements of the 89-10 program. The non-safety MFIIVs and the MF low flow bypass inlet isolation valves will be added to the Inservice Testing program as augmented components. The proposed TS specifies acceptance criteria (closure time of $\leq$ 10 seconds for the MFRVS and associated bypass valves and $\leq$ 120 seconds for the MFIIVs and associated bypass valves) that will assure assumptions in the main steam line break inside containment analysis are met. The power supply to the motor operators for the MFIIVs and the MF low flow bypass inlet isolation valves will be from a safety related source and the motor operators will be automatically loaded onto the emergency diesel generators (EDGs) following

a loss of offsite power. The required loading times and abiltiy of the EDGs to support this loading is currently under evaluation to assure EDGs have adequate margin. The 120 second closure time will account for any time delay associated with signal delay and with loading the valves onto the emergency diesel generators not included in the analysis. Electrical isolation (an existing safety related breaker) will assure that the safety related power supply cannot be degraded by the non-safety components. The power supplies for the MFIIVS and associated bypass valves will be different from the power supplies for the MFRVs and associated bypass valves they are in series with to assure that no single electrical failure could affect both sets of valves.

The proposed TS changes to reflect the planned modification make the TS more restrictive. The current TS provide for the operability of the feedwater line isolation signal in TS Table 3.5-4 and for the surveillance testing of that signal in Table 4.1-1. This TS will not change. The proposed TS change will include the following:

1. The proposed TS will add a new LCO, TS 3.4.A(8), that will require the MFRVs, the MF low flow bypass valves, the MFIIVs, and the MF low flow bypass inlet isolation valves to be operable when the average reactor coolant temperature is greater than or equal to 350°F except when all Main Boiler Feedpump Discharge Valves (MBFPDVs), all MFRVs and associated bypass valves, or all MFIIVs and associated bypass valves are closed and de-activated or isolated by a closed manual valve. This will add a TS requirement not currently in the TS to assure operability of the main feedwater isolation capability or the actual isolation of main feedwater whenever the reactor is in a condition (hot zero power) where main steam line breaks inside containment have been analyzed. Isolation is achieved whenever a MFRV or MFIIV closes and either the MF low flow bypass valve or the MF low flow bypass inlet isolation valve closes (they are in series on the single line bypassing MFRV and MFIIV). This is a more restrictive change since it adds TS controls consistent with plant accident analyses.

2. The proposed TS change will add a new action statement to TS 3.4.B for the condition where an isolation valve is discovered to be inoperable when the plant has an average reactor coolant temperature greater than 350°F, a condition requiring operability. The proposed action statement will require any inoperable isolation valve to be closed or isolated within 72 hours and will require verification every 7 days that the action is met. The proposed action statement will allow any number of valves to be declared inoperable unless two valves in series on the same flow path become inoperable. In that case, the flow path must be isolated within 8 hours. The action statement represents a more restrictive TS change since there are no current TS requirements for action if any of the feedwater isolation valves were to become inoperable.

3. The proposed change will add a new TS section 4.12 to require surveillance testing of the feedwater isolation valves. The valves will be augmented components in the Inservice Testing Program which will establish testing frequency. The TS acceptance criteria (closure times) are based on plant core reload analysis assumptions. The surveillance requirement represents a more restrictive TS change since there are no current TS requirements for surveillance testing.

The proposed TS change will require the proposed Improved TS for IP3 to be revised since the Improved TS 3.7.3 reflects current plant design. The revision will add the MFIIVs and associated bypass valves. The MBFPDVs will not be removed because they continue to provide feedwater isolation for a High-High steam generator water level. There will be no other changes, except clarification, since the proposed LCO, action statement and surveillance requirements are the same as those currently submitted in the proposed Improved TS. These were submitted as more conservative TS changes since there are no current requirements in TS for the feedwater isolation valves. The action statements and completion times in the improved TS and in the proposed TS are the same as those in the Standard TS issued by the NRC in NUREG 1431(Reference 4). Therefore they have been generically approved by the NRC for use.

The proposed TS change is predicated on a modification that is scheduled for RO 11. Issuance of the proposed change prior to the modification will not represent a safety concern because the core design and core reload analysis will be based upon the planned modification. The modification must be complete in order to start the plant up from the refuel outage.

IV. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

Operation of the Indian Point 3 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 TS change reflects a planned modification to automatically isolate main feedwater on a safety injection signal using the motor operated Main Feedwater Inlet Isolation Valves (MFIIVs) and MF low flow bypass inlet isolation valves. These non-safety valves will be incorporated into the IST program as augmented components and included in the Generic Letter 89-10 program for motor operated valves. The modification will not relocate the safety injection signal from the Main Boiler Feedpump Discharge Valves (MBFPDVs) but closure will no longer be assumed in analyses. The modification is based on current design function for the feedwater isolation following a main steam line break inside containment accomplished by MBFPDVs. The TS changes add a limiting condition for operation, required action statements with completion times and surveillance requirements that are the same as those previously approved for Westinghouse plants in the Standard Technical Specifications found in NUREG 1432. The plant core reload analysis will assume that the modification is complete (this eliminates the continued addition of the feedwater between the MFIIVS and associated bypass valves and the MBFPDVs) and demonstrate that a shutdown margin of 1.3% is acceptable and that no boron concentration needs to be assumed in the safety injection lines. The proposed changes cannot affect the probability of an accident occurring since they reflect a change in plant design consistent with current design which is not an accident initiator. The proposed changes cannot increase the consequences of postulated accidents since they reflect a change in plant design that will mitigate the effects of feedwater to a faulted steam generator for a main steam line break inside containment and restore past analytical assumptions regarding a 1.3%

shutdown margin and no boron in the safety injection lines.

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

   The proposed TS change reflects a planned modification to automatically isolate main feedwater on a safety injection signal using the motor operated Main Feedwater Inlet Isolation Valves (MFIIVs) and MF low flow bypass inlet isolation valves. These non-safety valves will be incorporated into the IST program as augmented components and included in the Generic Letter 89-10 program for motor operated valves. The modification will not relocate the safety injection signal from the Main Boiler Feedpump Discharge Valves (MBFPDVs) but closure will no longer be assumed in analyses. The modification is based on current design function for the feedwater isolation following a main steam line break inside containment accomplished by MBFPDVs. The TS changes add a limiting condition for operation, required action statements with completion times and surveillance requirements that are the same as those previously approved for Westinghouse plants in the Standard Technical Specifications found in NUREG 1432. The proposed TS changes do not create the possibility of a new or different type of accident from those previously evaluated since they reflect a design change that will accomplish the same feedwater isolation function as previously done by the MBFPDVs with no change to the manner in which the feedwater system operates.

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

   The proposed TS change reflects a planned modification to automatically isolate main feedwater on a safety injection signal using the motor operated Main Feedwater Inlet Isolation Valves (MFIIVs) and MF low flow bypass inlet isolation valves. These non-safety valves will be incorporated into the IST program as augmented components and included in the Generic Letter 89-10 program for motor operated valves. The modification will not relocate the safety injection signal from the Main Boiler Feedpump Discharge Valves (MBFPDVs) but closure will no longer be assumed in analyses . The modification is based on current design function for the feedwater isolation following a main steam line break inside containment accomplished by MBFPDVs. The TS changes add a limiting condition for operation, required action statements with completion times and surveillance requirements that are the same as those previously approved for Westinghouse plants in the Standard Technical Specifications found in NUREG 1432. The plant core reload analysis will assume that the modification is complete (this eliminates the continued addition of the feedwater between the MFIIVS and associated bypass valves and the MBFPDVs) and demonstrate that a shutdown margin of 1.3% is acceptable and that no boron concentration needs to be assumed in the safety injection lines. The proposed TS change cannot involve a significant reduction in the margin of safety since it is based upon a modification that will restore the margin of safety with respect to feedwater addition, shutdown margin and core boration for a main steam line break inside containment to the previously analyzed condition. This assumes that loading of the valves on the emergency diesel generators will not affect the emergency diesel generators margin.

V. IMPLEMENTATION OF THE PROPOSED CHANGE

This amendment request meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) as follows:

(i) The amendment involves no significant hazards consideration.

As described in Section IV of this evaluation, the proposed change involves no significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of an effluent that may be released offsite.

The proposed change does not involve the installation or any new equipment, or the modification of any equipment that may negatively affect the types or amounts of effluents that may be released offsite. Therefore, there is no significant change in the types or significant increase in the amounts that may be released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes are associated with physical plant changes but the changes are made in a general access area. There are no new modes of plant operation. Therefore, there is no significant increase in individual or cumulative occupational radiation exposure.

Based on the above, the Authority concludes that the proposed changes meet the criteria specified in 10 CFR 51.22 for a categorical exclusion from the requirements of 10 CFR 51.21 relative to requiring a specific environmental assessment by the Commission.

VI. CONCLUSION

The proposed changes will not involve a significant hazards analysis and meet the criteria for categorical exclusion for a specific environmental report. There will be no adverse affect on the Security and Fire Protection Programs since the plant modifications are reviewed for affects on these programs and no adverse affects were identified. There will be no affect on the Emergency Plan since the plant equipment mitigating a main steam line break is not part of that plan. The FSAR will be revised to reflect the plant modification as part of the IP3 design change process. There will be no effect on overall plant operations since normal system operation will remain the same.

The Plant Operating Review Committee and Safety Review Committee have reviewed this proposed change to the TS and have concluded that it does not involve a significant hazards consideration and will not endanger the health and safety of the public.

VII. REFERENCES

1. IPN-99-092, "Licensee Event Report # 1999-008-00, Plant outside Design Basis Due to an Error in an Assumption In the Main Steam Line Break Analysis," dated August 23, 1999.

2. IPN-00-008, "Proposed Change to the Technical Specification Regarding Revised Main Steam Line Break Accident," dated February 4, 2000.

3. NUREG 0800, "Standard Review Plan," Section 15.1.5, Revision 2 dated July 1981.

4. NUREG 1431, "Standard Technical Specifications - Westinghouse Plants," Revision 1, dated April 1995.

ATTACHMENT III TO IPN-00-063

MARKUP OF EXISTING TECHNICAL SPECIFICATION TO SHOW PROPOSED TECHNICAL SPECIFICATION CHANGES REGARDING REVISED MAIN FEEDWATER ISOLATION DESIGN CHANGE

(FOR INFORMATION ONLY)

New text is underlined and deleted text is struck out

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

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Amendment No. ~~6, 10, 11, 83, 91, 101, 116, 159~~,

(7) City water system piping and valves directly associated with providing backup supply to the auxiliary feedwater pumps are operable.

(8) Main Feedwater Regulation Valves (MFRVs), MF low flow bypass valves, Main Feedwater Inlet Isolation Valves (MFIIVs), and main feedwater (MF) low flow bypass inlet isolation valves shall be operable except when each main feed and bypass line is isolated by a closed and de-activated motor/air operated valve or isolated by a closed manual valve

B. Except as modified by E. below, if during power operations any of the conditions of 3.4-A above, except Items (1), (2) and (8), cannot be met within 48 hours, the operator shall start to shutdown and cool the reactor below 350°F using normal operation procedures.

If any valve required to be operable by item (8) is inoperable, close or isolate the inoperable valve within 72 hours and verify the valve is closed or isolated once per 7 days. This action for Item (8) is allowed for each valve except, if two valves in series in the same flow path are inoperable then isolate the affected flow path within 8 hours. If the actions for Item (8) are not taken within the required time, bring the reactor subcritical ($K_{eff} < 0.99$) within 6 hours after the completion time or action is not met and reduce average reactor coolant temperature to less than 350°F within an additional 6 hours.

C. If during power operations, the requirement of 3.4.A.2 is not satisfied, the following actions shall be taken:

1) With one auxiliary feedwater pump inoperable, restore the pump to operable status within 72 hours or be in hot shutdown within the next 12 hours.

2) With two auxiliary feedwater pumps inoperable, be in hot shutdown within 12 hours.

3) With three auxiliary feedwater pumps inoperable, maintain the plant in safe stable mode which minimizes the potential for a reactor trip and, immediately initiate corrective action to restore at least one auxiliary feedwater pump to operable status as soon as possible.

D. The gross turbine-generator electrical output at all times shall be within the limitation of Figure 3.4-1 or Figure 3.4-2 for the application conditions of turbine overspeed setpoint, number of operable low pressure steam dump lines, and condenser back pressure as noted thereon.

E. The reactor shall not be heated above 350°F unless both valves in the single auxiliary feedwater supply line from the Condensate Storage Tank are open. If, during power operations, it is discovered that one or both of the valves are closed, the following action shall be taken:

1) Immediately place the auxiliary feedwater system in the manual mode,

2) Within one hour either:

a) reopen the closed valve(s),

or

b) open the valves to the alternate city water supply,

Amendment No. ~~36, 91, 92~~,

and

3) Once a water supply has been restored, return the system to the automatic mode.

If the above action cannot be taken, then:

a) maintain the plant in a safe stable mode which minimizes the potential for a reactor trip,

and

b) continue efforts to restore water supply to the auxiliary feedwater system,

and

c) notify the NRC within 24 hours regarding planned corrective action.

Basis

A reactor shutdown from power requires removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condensers. Thereafter, core decay heat can be continuously dissipated via the steam bypass to the condenser as feedwater in the steam generator is converted to steam by heat absorption. Normally, the capability to feed the steam generators is provided by operation of the turbine cycle feedwater system.

The twenty main steam safety valves have a total combined rated capability of 15,108,000 lbs/hr. The total full power steam flow is 12,974,500 lbs/hr.; therefore twenty (20) main steam safety valves will be able to relieve the total steam flow if necessary. The total relieving capacity of the twenty main steam line safety valves is 116% of the total secondary steam flow at 100% rated power (3025 Mwt). The specified valve lift settings and relieving capacities are in accordance with the requirements of Section III of the ASME Boiler and Pressure Code, 1971 Edition. The operability of the twenty main steam line safety valves ensure that the secondary system pressure will be limited to within 110% of the design pressure of 1085 psig during the most severe anticipated system operational transient.

Startup and/or power operation with inoperable main steam line safety valves is allowable within the limitation of Table 3.4-1. Operation with up to three of the five main steam line safety valves per steam generator inoperable is permissible if the maximum allowed power level is below the heat removing capability of the operable MSSVs. This is accomplished by restricting the reactor power level such that the heat input from the primary side will not exceed the heat removing capability of the operable MSSVs of the most limiting steam generator. The reduction in reactor power level is achieved by reducing the power range neutron flux high setpoint. The reactor trip setpoint reductions are derived on the following basis:

$$Hi\phi = (100 / Q) [(w_s h_{fg} N) / K]$$

Amendment No. ~~91, 92, 151~~,

~~Section 4.12~~
~~FIRE PROTECTION~~
~~AND DETECTION SYSTEMS~~
~~has been deleted.~~

4.12 MAIN FEEDWATER ISOLATION

Applicability

Applies to the periodic testing requirements of the Main Feedwater Regulation Valves (MFRVs), MF low flow bypass valves, Main Feedwater Inlet Isolation Valves (MFIIVs), and main feedwater (MF) low flow bypass inlet isolation valves.

Objective

To verify the operability of the valves used to isolate main feedwater following a safety injection signal.

Specification

Verify, at a frequency in accordance with the Inservice Testing Program, each MFRV, MF low flow bypass valve, MFIIV and MF low flow bypass inlet isolation valve closes on an actual or simulated actuation signal within the following time limits:

a.	MFRV closure time	≤ 10 seconds
b.	MF low flow bypass closure time	≤ 10 seconds
c.	MFIIV closure time	≤ 120 seconds
d.	MF low flow bypass inlet isolation closure time	≤ 120 seconds

Basis

The testing of the main feedwater valves will verify their operability. Their operability is necessary for main feedwater isolation on a safety injection signal to stop excessive flow of feedwater into the steam generator. The time limits are based on closure times assumed in the main steam line break analysis. Valve closure must meet these time limits. If relay actuation and diesel generator loading are not separately considered in the analysis, then these times must be added to the valve closure time when meeting the specified closure times. This is necessary to mitigate the effects of excessive cooldown and the continued addition of mass and energy to the containment following a main steam line break inside containment.

Amendment No. ~~10, 45, 146, 157~~,

ATTACHMENT IV TO IPN-00-063

MARKUP OF IMPROVED TECHNICAL SPECIFICATION TO SHOW EFFECT OF PROPOSED TECHNICAL SPECIFICATION CHANGES REGARDING REVISED MAIN FEEDWATER ISOLATION DESIGN CHANGE

Revise ITS as follows:

Remove Section	Insert Section
3.7.3	3.7.3

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

3.7 PLANT SYSTEMS

3.7.3 Main Boiler Feedpump Discharge Valves (MBFPDVs), Main Feedwater Regulation Valves (MFRVs), ~~and MFRV~~ MF Low Flow Bypass Valves, Main Feedwater Inlet Isolation Valves (MFIIVs), and main feedwater (MF) low flow bypass inlet isolation Valves.

LCO 3.7.3 Two MBFPDVs, four MFRVs, ~~and~~ four ~~MFRV~~ MF low flow bypass valves, four MFIIVs, and four MF low flow bypass inlet isolation valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when ~~MBFPDVs, or MFRVs and MFRV low flow valves are closed and de-activated~~ each main feed and bypass line is isolated by a closed and de-activated motor/air operated valve or isolated by a closed manual valve.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each valve.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or ~~both MBFPDVs~~ more MFIIVs inoperable.	A.1	Close or isolate ~~MBFPDV~~ MFIIV.	72 hours
	AND		
	A.2	Verify ~~MBFPDV~~ MFIIV is closed or isolated.	Once per 7 days
B. One or more MFRVs inoperable.	B.1	Close or isolate MFRV.	72 hours
	AND		
	B.2	Verify MFRV is closed or isolated.	Once per 7 days

(continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more ~~MFRV~~ MF low flow bypass valves inoperable.	C.1	Close or isolate bypass valve.	72 hours
	AND		
	C.2	Verify bypass valve is closed or isolated.	Once per 7 days
D. One or more MF low flow bypass inlet isolation valves inoperable.	D.1	Close or isolate bypass valve.	72 hours
	AND		
	D.2	Verify bypass valve is closed or isolated.	Once per 7 days
E. Two valves in series in the same flow path inoperable.	**E.1**	**Isolate affected flow path.**	**8 hours**
F. One or both MBFPDVs inoperable	**F.1**	**Close or isolate MBFPDV.**	72 hours
	AND		
	A.2	**Verify MBFPDV is closed or isolated.**	Once per 7 days
E. Required Action and associated Completion Time not met.	**E.1**	**Be in MODE 3.**	**6 hours**
	AND		
	E.2	**Be in MODE 4.**	**12 hours**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify each MFIIV, MF low flow bypass inlet isolation valve ~~MBFPDV~~, MFRV, ~~and MFRV~~ MF low flow bypass valve and MBFPDV closes on an actual or simulated actuation signal within the following limits: a. MFIIV closure time ≤ 120 seconds; b. MF low flow bypass inlet isolation valve closure time ≤ 120 seconds; c. MFRV closure time ≤ 10 seconds; ~~and,~~ d. MF~~RV~~ Low Flow Bypass valve closure time ≤ 10 seconds~~.~~; and e. MBFPDV closure time ≤ 122 seconds	In accordance with the Inservice Testing Program

B 3.7.3 Main Boiler Feedpump Discharge Valves (MBFPDVs), Main Feedwater Regulation Valves (MFRVs), ~~and~~ MF~~RV~~ Low Flow Bypass Valves, Main Feedwater Inlet Isolation Valves (MFIIVs), and MF low flow bypass inlet isolation Valves

BASES

BACKGROUND

The ~~MBFPDVs~~ MFRVs and associated low flow bypass valves isolate main feedwater (MFW) flow to the secondary side of the steam generators following a high energy line break (HELB). The safety related function of the ~~MFRVs~~ MFIIVs and associated MF low flow bypass inlet isolation valves is to provide the second means to isolation of MFW flow to the secondary side of the steam generators following an HELB inside containment. Closure of the ~~two MBFPDVs or~~ four MFRVs and ~~four MFRV low flow~~ associated bypass valves (either the low flow valves or the inlet isolation valves will isolate the bypass line) or four MFIIVs and associated bypass valves terminates flow to the steam generators. The consequences of events occurring in the main steam lines or in the MFW lines downstream from the ~~MBFPDVs~~ MFIIVs and MF low flow bypass inlet isolation valves will be mitigated by their closure. Closure of the ~~MBFPDVs or~~ MFRVs and ~~MFRV low flow~~ associated bypass valves or MFIIVs and associated bypass valves, effectively terminates the addition of feedwater to an affected steam generator, limiting the mass and energy release for steam line breaks (SLBs) or FWLBs inside containment, and reducing the cooldown effects for SLBs.

In the event of a secondary side pipe rupture inside containment, either the ~~MBFPDVs or~~ MFRVs ~~and MFRV low flow bypass valves~~ or MFIIVs with associated bypass valves limit the quantity of high energy fluid that enters containment through the break, and provide a pressure boundary for the controlled addition of auxiliary feedwater (AFW) to the intact loops.

One ~~MBFPDV is located on the discharge of each of the two Main Boiler Feedpumps (MBFPs), and one~~ MFRV and ~~MFRV low flow bypass valve~~ one MFIIV with a low flow bypass valve and a low flow bypass inlet isolation valve on the line bypassing the MFRV and MFIIV, is located on each of the four MFW lines, outside but close to containment. The MFIIVs and MFRVs are located upstream of the AFW injection point so that AFW may be supplied to the steam generators following ~~MBFPDV or~~ MFRV or MFIIV closure. The piping volume from these valves to the steam generators must be accounted for in calculating mass and energy releases, and refilled prior to AFW reaching the steam generator following either an SLB or FWLB.

The ~~two MBFPDVs,~~ four MFRVs and four MF~~RV~~ low flow bypass valves as well as the four MFIIVs and four MF low flow bypass inlet isolation valves will close on receipt of an ESFAS Safety Injection signal. An ESFAS Tavg – Low coincident with reactor trip will close the four MFRVs and

BACKGROUND (continued)

four MF~~RV~~ low flow bypass valves. A Steam Generator Hi-Hi level trip will close the MBFPDV and MFRVs and MF~~RV~~ low flow bypass valves associated with the affected SG. They may also be closed manually. In addition to the two MBFPDVs, four MFRVs and four MF~~RV~~ low flow bypass valves, four MFIIVs and four MF low flow bypass inlet isolation valves, a check valve outside containment is available. The check valve isolates the feedwater line to prevent blowdown of a SG if main or auxiliary feedwater pressure are lost.

A description of the MBFPDVs, ~~and~~ MFRVs and MFIIVs is found in the FSAR, Section 10.2 (Ref. 1).

APPLICABLE SAFETY ANALYSES

The design basis of the ~~MBFPDVs and~~ MFRVs and MFIIVs and associated bypass line valves is established by the analyses for the large SLB. Closure of the ~~MBFPDVs,~~ MFRVs and MF~~RV~~ low flow bypass valves and MFIIVs and MF low flow bypass inlet isolation valves, may also be relied on to terminate an SLB for core response analysis ~~and excess feedwater event upon the receipt of a steam generator water level - high high or~~ on a feedwater isolation signal. Feedwater isolation ~~also~~ occurs as a result of any safety injection signal.

Failure of an ~~MBFPDV~~ MFIIV in conjunction with the failure of an MFRV or failure of a MF~~RV~~ low flow bypass valve in conjunction with MF low flow bypass inlet isolation valve to close following an SLB can result in additional mass and energy being delivered to the steam generators, contributing to cooldown. This failure also results in additional mass and energy releases following an SLB or FWLB event. The MBFPDV, MFRVs and MF low flow isolation valves may also be relied upon to terminate an excess feedwater event upon receipt of a steam generator water level High-High signal.

The MBFPDVs, MFRVs and MF~~RVs~~ Low Flow Bypass Valves, MFIIVs and MF low flow bypass inlet isolation valves satisfy Criterion 3 of 10 CFR 50.36.

LCO

This LCO ensures that the ~~MBFPDVs,~~ MFRVs and MF~~RV~~ low flow bypass valves, MFIIVs and MF low flow bypass inlet isolation valves will isolate MFW flow to the steam generators, following a main steam line break inside containment. This LCO also ensures that the MBFPDVs, MFRVs and MF low flow bypass valves will isolate MFW to the steam generators following excess feedwater flow and a high-high SG level indication.

LCO (continued)

This LCO requires that two MBFPDVs, four MFRVs and four MF~~RV~~ low flow bypass valves, four MFIIVs and four MF low flow bypass inlet isolation valves be OPERABLE. The MBFPDVs, MFRVs and MF~~RV~~ low flow bypass valves, MFIIVs and MF low flow bypass inlet isolation valves are considered OPERABLE when isolation times are within limits and they close on an isolation actuation signal.

Failure to meet the LCO requirements can result in additional mass and energy being released to containment following an SLB or FWLB inside containment. A feedwater isolation signal on a steam generator water level - high high signal and this function is relied on to terminate an excess feedwater flow event; therefore, failure to meet the LCO may result in the introduction of water into the main steam lines.

APPLICABILITY

The MBFPDVs, MFRVs and MF~~RV~~ bypass valves, MFIIVs and MF low flow bypass inlet isolation valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and steam generators. This ensures that, in the event of an HELB inside containment, a single failure cannot result in excess feedwater addition ~~the blowdown of more than one steam generator~~. In MODES 1, 2, and 3, the MBFPDVs, MFRVs and MF~~RV~~ bypass valves, MFIIVs and MF low flow bypass inlet isolation valves are required to be OPERABLE. They ~~to~~ limit the amount of available fluid that could be added to containment in the case of a secondary system pipe break inside containment or they terminate an excess feedwater flow event. When the valves are closed and de-activated or isolated by a closed manual valve, they are already performing their safety function. A de-activated motor operated valve is considered to be a manual valve.

In MODES 4, 5, and 6, steam generator energy is low. Therefore, the MBFPDVs, MFRVs and MF~~RV~~ bypass valves, MFIIVs and MF low flow bypass inlet isolation valves are normally closed since MFW is not required.

ACTIONS

The ACTIONS table is modified by a Note indicating that separate Condition entry is allowed for each valve.

A.1 and A.2

With one ~~MFPDV~~ MFIIV in one or ~~both~~ more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 72 hours. When these valves are closed or isolated, they are performing their required safety

ACTIONS A.1 and A.2 (continued)

function.

The 72 hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves~~, the MBFP trip function,~~ and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The 72 hour Completion Time is reasonable, based on industry operating experience.

Inoperable ~~MBFPDVs~~ MFIIVs that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated.

B.1 and B.2

With one MFRV in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 72 hours. When these valves are closed or isolated, they are performing their required safety function.

The 72 hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The 72 hour Completion Time is reasonable, based on industry operating experience.

Inoperable MFRVs, that are closed or isolated, must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of other administrative controls to ensure that the valves are closed or isolated.

C.1 and C.2

With one MF~~RV~~ low flow bypass valve in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 72 hours. When these valves are closed or isolated, they are performing their required safety function.

ACTIONS (continued)

The 72 hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The 72 hour Completion Time is reasonable, based on industry operating experience.

Inoperable associated bypass valves that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of the administrative controls that ensure that these valves are closed or isolated.

D.1 and D.2

With one MF low flow bypass inlet isolation valve in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 72 hours. When these valves are closed or isolated, they are performing their required safety function.

The 72 hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The 72 hour Completion Time is reasonable, based on industry operating experience.

Inoperable associated bypass valves that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of the administrative controls that ensure that these valves are closed or isolated.

E.1

With two inoperable valves in series in the same flow path, there may be no redundant system to operate automatically and perform the required safety function. Under these conditions, affected valves in each flow path must be restored to OPERABLE status, or the affected flow path isolated within 8 hours. This action returns the system to the condition where at least one valve in each flow path is performing the required safety function. The 8 hour Completion Time is reasonable, based on operating experience, to complete the actions required to close

ACTIONS A.1 and A.2 (continued)

the MBFPDV or MFRV, or otherwise isolate the affected flow path.

F.1 and F.2

With one MFPDV in one or both flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 72 hours. When these valves are closed or isolated, they are performing their required safety function.

The 72 hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves, the MRV and MF low flow bypass valves ~~MBFP trip function~~, and the low probability of an excess feedwater flow event occurring during this time period that would require isolation of the MFW flow paths. The 72 hour Completion Time is reasonable, based on industry operating experience.

Inoperable MBFPDVs that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated.

E.1 and E.2

If the MBFPDV(s), MFRV(s), ~~and MFRV~~ bypass valve(s), MFIIV(s), and MFIV bypass valve(s) cannot be restored to OPERABLE status, or closed, or isolated within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR verifies that the closure time of each MBFPDV(s), MFRV(s), ~~and MFRV~~ bypass valves, MFIIVs and MFIV bypass valves is within required limits on an actual or simulated actuation signal. The closure times are assumed in the accident and containment analyses. The acceptance criteria for this SR do not include the 2 second delay associated with the ESFAS activation signal or the EDG loading times when the analysis includes these times. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. These valves can not be tested at power because valve closure or even a part stroke exercise increases the risk of a valve closure and MBFP trip. This is consistent with the ASME Code, Section XI (Ref. 2), quarterly stroke requirements during operation in MODES 1 and 2.

The Frequency for this SR is in accordance with the Inservice Testing Program. The required Frequency for valve closure is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the required Frequency.

REFERENCES

1. FSAR, Section 10.2.

2. ASME, Boiler and Pressure Vessel Code, Section XI.