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October 3, 2005

Indian Point Unit 3
Docket No. 50-286
NL-05-105

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop O-P1-17
Washington, D.C. 20555-0001

Subject: **Proposed Change to Technical Specifications Regarding Emergency Core Cooling System Throttle Valve Surveillance Requirements**

Dear Sir:

Pursuant to 10 CFR 50.90, Entergy Nuclear Operations, Inc. (Entergy) hereby requests an amendment to the Operating License and the Technical Specifications (TS) contained in Appendix A for Indian Point Unit 3. The proposed amendment revises Surveillance Requirement 3.5.2.6 to reflect the changes to the Emergency Core Cooling System throttle valves. A modification added seven throttle valves (valves SI-2165, 2166, 2168, 2169, 2170, 2171, and 2172) which the proposed amendment will add to the surveillance. The proposed amendment will remove existing throttle valves SI-856A and 856F from the surveillance since they are now locked closed. The proposed amendment will add SI-856B and 856G to the surveillance since these valves are used in a throttle position when opened.

The proposed changes have been evaluated in accordance with 10 CFR 50.91(a)(1) using the criteria of 10 CFR 50.92(c) and Entergy has determined that these proposed changes involve no significant hazards considerations (Attachment I). The proposed changes to the TS are provided in Attachment II. Planned Bases changes are in Attachment III for information.

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

There are no new commitments identified in this submittal. If you have any questions or require additional information, please contact Mr. Patric W. Conroy at (914) 734-6668.

A001

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 3, 2005.

Sincerely,

Fred R. Dacimo
Site Vice President
Indian Point Energy Center

cc:

Mr. Boska, Senior Project Manager
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Mr. Peter R. Smith
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Mr. Samuel J. Collins
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Mr. Paul Eddy
New York State Dept. of Public Service

ATTACHMENT I TO NL-05-105

ANALYSIS OF PROPOSED LICENSE AMENDMENT REQUEST AND TECHNICAL SPECIFICATION CHANGE REGARDING EMERGENCY CORE COOLING SYSTEM THROTTLE VALVES

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

1.0 DESCRIPTION

This is a request to amend Operating License DPR-64, Docket 286, for Indian Point Unit 3 (IP3). The proposed amendment revises Technical Specification (TS) Surveillance Requirement (SR) 3.5.2.6 to reflect the changes to the Emergency Core Cooling System throttle valves. A modification added seven throttle valves (valves SI-2165, 2166, 2168, 2169, 2170, 2171, and 2172) which the proposed amendment will add to the surveillance. The proposed amendment will remove existing throttle valves SI-856A and 856F from the surveillance since they are now locked closed. The proposed amendment will add SI-856B and 856G to the surveillance since they are used in a throttle position when opened.

2.0 PROPOSED CHANGES

Revise TS 3.5.2, SR 3.5.2.6 from:

> "Verify, for each ECCS throttle valve listed below, each position stop is in the correct position.
>
> Valve Numbers
>
> SI-856A SI-856F
> SI-856C SI-856H
> SI-856D SI-856J
> SI-856E SI-856K"

To say:

> "Verify, for each ECCS throttle valve listed below, each position stop is in the correct position.
>
> Valve Numbers
>
> SI-856B SI-856H SI-2168
> SI-856C SI-856J SI-2169
> SI-856D SI-856K SI-2170
> SI-856E SI-2165 SI-2171
> SI-856G SI-2166 SI-2172"

3.0 TECHNICAL ANALYSIS

This License Amendment request is intended to correct a non-conservative TS surveillance requirement. The current SR 3.5.2.6 does not include throttle valves SI-2165, 2166, 2168, 2169, 2170, 2171, 2172, 856B, and 856G. The amendment is also intended to remove valves SI-856A and 856F since these are

now locked closed such that throttle positions no longer require verification. Administrative controls assure that these valves are verified in the proper position required by flow balancing.

The High Head Safety Injection (HHSI) system utilizes three pumps discharging to two headers for safety injection. One header contains the Boron Injection Tank (BIT) that is no longer utilized and it is called the BIT header. Prior to the stretch power uprate (SPU), the BIT header discharged to four cold legs through motor operated valves 856E and 856C and manual valves 856D and 856F and discharged to one hot leg through motor operated valve 856G. The non BIT header discharged to four cold legs through motor operated valves 856H and 856J and manual valves 856A and 856K and discharged to one hot leg through motor operated valve 856B. The eight cold leg valves were used to throttle flow and the two hot leg valves were closed and de-energized until hot leg recirculation was initiated. For hot leg injection, these two hot leg valves were then opened to a preset throttled position.

The HHSI System was modified as part of the SPU to provide increased cold leg and hot leg flow capabilities, to support hot leg switchover as early as 6.5 hours following a postulated LOCA, to eliminate the potential for debris accumulation during recirculation, and to reduce or eliminate the potential for cavitation damage to throttle valves. The modification included the addition of six cold leg throttle valves (valves SI-2165, 2166, 2169, 2170, 2171, and 2172) and one hot leg throttle valve (SI-2168). These are manual valves which are designed to be set in a locked throttled position after adjustment during flow balance testing. The locked position will provide the required HHSI flow while also limiting pump run out flow. The SPU submittal regarded these valves as similar to orifices and based on the guidance of WCAP 1431, Rev 3 (surveillance 3.5.2.7 is not required for flow limiting orifices) concluded that no Technical Specification change was required. A recent review concluded that it is more appropriate to include these valves in the surveillance requirement since these valves can change position when being set. The SPU change also locked closed valves SI-856A and SI-856F. Since these valves no longer perform a throttle function, they can be removed from SR 3.5.2.6.

Since the SPU modification allows valves SI-856C, 856D, 856E, 856H, 856J, or 856K to be used for trimming system resistance based on system flow balance testing, these valves could be used to perform throttling and they are therefore being left in SR 3.5.2.6. During this cycle these valves have their limit switches adjusted so that they do not perform a throttle function. The TS bases will clarify the option to flow balance with these valves.

The hot leg valves SI-856B and 856G are used to throttle flow during hot leg recirculation. The throttle position is achieved by adjusting the limit switch so that when a valve is opened for hot leg recirculation it will open to the proper position to throttle flow. Valve SI-856G continues to function in this manner and has been added to SR 3.5.2.6. The SPU modification allows valve SI-856B to be used for trimming system resistance based on system flow balance testing. Since valve SI-856B could be used to perform throttling, it is being added to SR 3.5.2.6.

The SR requires verification, for each ECCS throttle valve listed, that "each position stop is in the correct position." No change to this wording is requested since the throttle positions of the motor operated valves are set by adjusting limit switches to stop them in position and the manually operated valves are set by locking valves in the position where they are stopped for flow testing. The TS Bases will clarify this.

The SPU application (Reference 1) stated, in Section 4.1.4, that the power uprate required higher HHSI cold leg and hot leg flows. The application described the HHSI system modification that permanently closed two cold leg branch valves and throttled the HHSI system to provide higher cold leg and hot leg flows. System changes were also made to enhance spilling line performance. These changes addressed recirculation sump particle criteria and throttle valve cavitation issues.

Further clarification was provided in response to Question RSA-12 (Reference 2). This response advised that the revised HHSI system cold and hot leg performance was calculated with the 856A and 856F valves closed. This HHSI flow performance data was then used in the various accident analyses performed in support of the Indian Point 3 SPU program. The appropriate limiting single failure assumptions were also applied in calculating the HHSI system flow performance data. The driving reason for permanently closing the 856A line (to cold leg loop 1) and 856F line (to cold leg loop 3) was identified as the achievement of higher hot leg recirculation flow performance, required to support the SPU program, while maintaining the maximum allowable HHSI pump flow limits. The response also indicated that 856A and 856F valves are administratively controlled by changing the normal position to lock closed.

The SPU submittal discussed above did not request a change to SR 3.5.2.6 because the throttle valves were regarded as similar to orifices due to their design. Based on the guidance of WCAP-1431, Rev 3 (surveillance 3.5.2.7 is not required for flow limiting orifices), a conclusion was reached that no Technical Specification change was required. A recent review concluded that it is more appropriate to include these valves in the surveillance requirement since these valves can change position when being set.

4.0 REGULATORY ANALYSIS

4.1 No Significant Hazards Consideration Determination

Entergy has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by assessing the change using the three criteria of 10 CFR 50.92 as discussed below:

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

Response – No

The proposed change to Surveillance Requirement (SR) 3.5.2.6 adds nine valves and removes two valves in the High Head Safety Injection (HHSI) system discharge lines. The SR requires verification that identified ECCS throttle valves position stops are in the correct position. The change reflects a stretch power uprate (SPU) modification that added throttle valves SI-2165, 2166, 2168, 2169, 2170, 2171, and 2172, and locked closed valves SI-856A and 856F. This amendment is adding to the SR those throttle valves which are now under administrative control and deletes the valves which no longer perform a throttle function. The amendment also adds hot leg valves SI-856B and 856G which are used as throttle valves but never included in the SR. Valve SI-856G still performs a throttle function and valve SI-856B can still be considered a throttle valve when used to trim system resistance. Verification of valve position has no effect on the probability of an accident previously evaluated since the HHSI system is not associated with the initiation of any accident. The verification of valve positions that will be required by the revised SR provides additional assurance that the HHSI throttle valves are in the position that is established by flow testing. Providing assurance of required valve positions does not increase the consequences of an accident previously evaluated. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response – No

The proposed change to Surveillance Requirement 3.5.2.6 adds nine valves and removes two valves in the High Head Safety Injection (HHSI) system discharge lines. The SR requires verification that identified ECCS throttle valves position stops are in the correct position. The change corrects a deficient surveillance and does not affect the function of the valves or otherwise affect the design and operation of plant systems and components and therefore no new accident scenarios would be created. Therefore, no new failure modes are being introduced that could lead to different accidents.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response – No

The proposed change to Surveillance Requirement 3.5.2.6 adds nine valves and removes two valves in the High Head Safety Injection (HHSI) system discharge lines. The SR requires verification that identified ECCS throttle valves position stops are in the correct position. The change reflects a stretch power uprate (SPU) modification that added throttle valves SI-2165, 2166, 2168, 2169, 2170, 2171, and 2172, and locked closed valves SI-856A and 856F. The proposed amendment also adds valves SI-856B and 856G which are used as throttle valves but never included in the SR. Valve SI-856G still performs a throttle function and valve SI-856B can still be considered a throttle valve when used to trim system resistance. The frequency for verification of throttle valve stop positions is not altered by this amendment so this has no effect on the margin of safety. The valves for which verification of positions stops is required reflect the manner in which the system is currently analyzed and configured so the proposed change serves to maintain the required margin of safety by adding to the Technical Specifications the surveillances presently being administratively controlled. Therefore, the proposed change does not involve a significant reduction in the margin of safety.

4.2 Applicable Regulatory Requirements / Criteria

The proposed changes have been evaluated to determine compliance with applicable regulatory requirements.

10 CFR 50.46 establishes acceptance criteria for emergency core cooling system. The HHSI system was evaluated for SPU in a modified condition. That modification included seven new throttle valves (valves SI-2165, 2166, 2168, 2169, 2170, 2171, and 2172), added the potential use of valves SI-856B, 856C, 856D, 856E, 856H, 856J, or 856K as throttle valves to trim system resistance during system flow balance testing, and locked closed throttle valves SI-856A and 856F eliminating them as throttle valves. Valve 856G is used as a throttle valve but was never included in the surveillance requirement. These changes were made to enhance system operation. The proposed amendment will revise

the surveillance requirements to reflect this configuration. Surveillances, now performed under administrative controls, provide assurance that the HHSI system can perform as necessary to maintain compliance with 10 CFR 50.46.

4.3 Environmental Considerations

The proposed changes in this license amendment to the plant technical specifications do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

5.0 PRECEDENCE

NUREG 1431, Revision 3, "Standard Technical Specifications Westinghouse Plants" requires verification, for each ECCS throttle valve, that the position stop is in the correct position. This assures that realigned valves are in the correct position. The proposed revision is consistent with that requirement.

6.0 REFERENCES

1. Entergy Letter NL-04-069 to NRC, "Proposed Changes to Technical Specifications: Stretch Power Uprate (4.85%) and Adoption of TSTF 339," June 3, 2004.

2. Entergy Letter NL-04-156 to NRC, "Reply to RAI Regarding Indian Point 3 Stretch Power Uprate dated November 5, 2004 (TAC MC 3352)," dated December 15, 2004.

ATTACHMENT II TO IPN-05-105

MARK UP OF EXISTING TECHNICAL SPECIFICATION

PAGES TO SHOW THE PROPOSED CHANGE

Note - Deleted items have
been lined through and
new items underlined

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT 3 NUCLEAR POWER PLANTS
DOCKET NO. 50-286
DPR-64

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.2	Verify that each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.2.3	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.4	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.5.2.5	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.5.2.6	Verify, for each ECCS throttle valve listed below, each position stop is in the correct position. Valve Numbers ~~SI-856A~~ ~~SI-856F~~ SI-856C SI-856H SI-856D SI-856J SI-856E SI-856K SI-856B SI-2168 SI-856G SI-2169 SI-2170 SI-2165 SI-2171 SI-2166 SI-2172	24 months

(continued)

ATTACHMENT III TO IPN-05-105

MARK UP OF EXISTING TECHNICAL SPECIFICATION

BASES PAGES TO SHOW THE PROPOSED CHANGE

(FOR INFORMATION ONLY)

Note - Deleted items have
been lined through and
new items underlined

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR- 64

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.2.4 and SR 3.5.2.5

These Surveillances demonstrate that each automatic ECCS valve actuates to the required position on an actual or simulated SI signal and that each ECCS pump starts on receipt of an actual or simulated SI signal. Note that the Containment Recirculation system is a manually initiated system and is not included as part of this SR. Additionally, this Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 24 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for unplanned plant transients if the Surveillances were performed with the reactor at power. The 24 month Frequency is also acceptable based on consideration of the design reliability (and confirming operating experience) of the equipment. The actuation logic is tested as part of ESF Actuation System testing, and equipment performance is monitored as part of the Inservice Testing Program.

SR 3.5.2.6

~~Rea~~Alignment of valves in the HHSI flow path on ~~an SI signal~~ is necessary for proper ECCS performance. These valves have stops to allow proper positioning and/or locking manual valves in the flow path for restricted flow to a ruptured cold leg, ensuring that the other cold legs receive at least the required minimum flow, and to allow proper positioning for restricting hot leg flow. Therefore, an improperly positioned valve could result in the inoperability of more than one injection flow path. The stops and/or the locked manual valves are set based on the results of the most recent ECCS operational flow test. Valves SI-856B, 856C, 856D, 856E, E856H, 856J, and 856K are not necessarily used for flow balancing but can be used to trim system resistance during flow balance testing. The stop positions are set to reflect their usage. The 24 month Frequency is based on the reasons stated in SR 3.5.2.4 and SR 3.5.2.5.

SR 3.5.2.7

Periodic inspections of each containment and recirculation sump suction inlet ensure that each is unrestricted and stays in