



January 14, 2002  
C0102-02

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

SUBJECT: Donald C. Cook Nuclear Plant Units 1 and 2  
Docket Nos. 50-315 and 50-316  
License Amendment Request  
for Pressurizer Code Safety Valve Setpoint Tolerance

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant Unit 1 and Unit 2, proposes to amend Appendix A, Technical Specifications (TS), of Facility Operating Licenses DPR-58 and DPR-74. I&M proposes to revise Unit 2 TS 3.4.2, "Safety Valves – Shutdown," and TS 3.4.3, "Safety Valves – Operating," to increase the allowable as-found setpoint tolerance for the Unit 2 pressurizer code safety valves from plus or minus ( $\pm$ ) 1 percent (%) to  $\pm$  3%. In addition, I&M proposes to add an allowable  $\pm$  1% as-left setpoint tolerance for the pressurizer code safety valves to Unit 1 and Unit 2 TS 3.4.2 and TS 3.4.3.

The proposed Unit 2 change in as-found setpoint tolerance is requested to provide additional operating margin for the Unit 2 pressurizer code safety valves, and is necessary to accommodate normal setpoint drift. The proposed change in as-left setpoint tolerance for Unit 1 and Unit 2 is also necessary to accommodate normal setpoint drift. The proposed  $\pm$  1% as-left setpoint tolerance provides reasonable assurance that the actual operating setpoint of the pressurizer code safety valves will remain within the  $\pm$  3% setpoint tolerance band assumed in the accident and safety analyses throughout the entire surveillance interval. In addition, I&M proposes three types of format changes to the revised Unit 2 TS 3.4.3 page that do not affect any technical requirements.

The proposed change to increase the allowable as-found setpoint tolerance for the pressurizer code safety valves makes the Unit 2 TS consistent with the Unit 1

A001

TS. The proposed change to add an allowable  $\pm 1\%$  as-left setpoint tolerance for the Unit 1 and Unit 2 pressurizer code safety valves is consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 2, dated April 30, 2001.

Enclosure 1 provides an oath and affirmation affidavit statement. Enclosure 2 provides a detailed description and safety analysis to support the proposed changes, including the 10 CFR 50.92(c) evaluation, which concludes that no significant hazard is involved, and the environmental assessment. TS pages that are marked to show the proposed changes are provided in Attachments 1A and 1B for Unit 1 and Unit 2, respectively. The proposed TS pages, with the changes incorporated, are provided in Attachments 2A and 2B for Unit 1 and Unit 2, respectively. There are no new regulatory commitments made in this letter.

I&M requests approval of the proposed amendment consistent with the normal Nuclear Regulatory Commission (NRC) review schedule for this type of change. Once approved, the amendments shall be implemented within 45 days.

No previous submittals affect the TS pages that are submitted in this request. If any future submittals affect these TS pages, I&M will coordinate the changes to the pages with the NRC Project Manager to ensure proper TS page control when the associated license amendment requests are approved.

If you have any questions or require additional information, please contact Mr. Gordon P. Arent, Manager of Regulatory Affairs, at (616) 697-5553.

Sincerely,

A handwritten signature in black ink, appearing to read "M. W. Rencheck", with a stylized flourish at the end.

M. W. Rencheck  
Vice President, Nuclear Strategic Business Improvement

/jen

Enclosures:

1. Affidavit
2. Evaluation of the Proposed Changes

Attachments:

1A and 1B Technical Specification Pages Marked To Show Proposed Changes  
2A and 2B Proposed Technical Specification Pages

c: K. D. Curry  
J. E. Dyer  
MDEQ - DW & RPD  
NRC Resident Inspector  
R. Whale

**AFFIDAVIT**

I, Michael W. Rencheck, being duly sworn, state that I am Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

Indiana Michigan Power Company

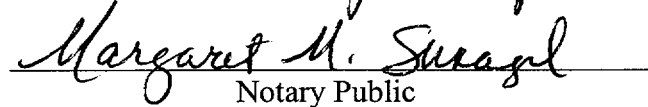


M. W. Rencheck

Vice President, Nuclear Strategic Business Improvement

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 14 DAY OF January, 2002

  
Notary Public

My Commission Expires 11-23-2005

**Application for Amendment to  
Technical Specification (TS) 3.4.2, "Safety Valves – Shutdown," and  
TS 3.4.3, "Safety Valves – Operating"**

**1.0    Description**

Pursuant to 10 CFR 50.90, Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant (CNP) Unit 1 and Unit 2, proposes to amend Appendix A, Technical Specifications (TS), of Facility Operating Licenses DPR-58 and DPR-74. Specifically, I&M proposes to revise Unit 2 TS 3.4.2, "Safety Valves – Shutdown," and TS 3.4.3, "Safety Valves – Operating," to increase the allowable as-found setpoint tolerance for the Unit 2 pressurizer code safety valves from plus or minus ( $\pm$ ) 1 percent (%) to  $\pm$  3%. In addition, I&M proposes to add an allowable  $\pm$  1% as-left setpoint tolerance for the Unit 1 and Unit 2 TS 3.4.2 and TS 3.4.3 pressurizer code safety valves.

The proposed Unit 2 change in as-found setpoint tolerance is requested to provide additional operating margin for the Unit 2 pressurizer code safety valves, and is necessary to accommodate normal setpoint drift. The proposed change in as-left setpoint tolerance for Unit 1 and Unit 2 is also necessary to accommodate normal setpoint drift. The proposed  $\pm$  1% as-left setpoint tolerance provides reasonable assurance that the actual operating setpoint of the pressurizer code safety valves will remain within the  $\pm$  3% setpoint tolerance band assumed in the accident and safety analyses throughout the entire surveillance interval.

The proposed change to increase the allowable as-found setpoint tolerance to  $\pm$  3% for the Unit 2 pressurizer code safety valves will make the Unit 2 TS consistent with the Unit 1 TS. The proposed change to add an allowable  $\pm$  1% as-left setpoint tolerance for the pressurizer code safety valves for Unit 1 and Unit 2 is consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 2, dated April 30, 2001 (Reference 1).

I&M also proposes to make format changes to the affected Unit 2 TS 3.4.3 page that do not affect any technical requirements.

**2.0    Proposed Change**

Specifically, the proposed changes would revise the following:

Unit 2 TS 3.4.2 and 3.4.3 Limiting Conditions for Operation would be revised to change the pressurizer code safety valve setpoint tolerance from  $\pm$  1% [2461 to 2509 pounds per square inch gauge (psig)] to  $\pm$  3% (2411 to 2559 psig). The 2485 psig nominal lift setting for the pressurizer code safety valves would not be revised.

Unit 1 and 2 TS 3.4.2 and 3.4.3 Limiting Conditions for Operation would be revised to include a footnote stating: "The pressurizer code safety valve shall be reset to the nominal value  $\pm 1\%$  whenever found outside  $\pm 1\%$  tolerance."

In addition, I&M proposes three types of format changes to the revised Unit 2 TS 3.4.3 page. The types of changes to be applied include:

1. Reformat the header to include numbered first and second-tier TS section titles and a full-width single line to separate the header section titles from the page text.
2. Reformat the footer to include "Page (page number)" center page, "AMENDMENT (past amendment numbers, with strikethrough, and ending with the current amendment number)" on the right side of the page, and a full-width single line to separate the footer from the page text.
3. Fully justify the text and change the font.

### **3.0 Background**

The setpoint tolerance for the Unit 2 pressurizer code safety valves is currently  $\pm 1\%$  of the nominal lift pressure of 2485 psig. This tolerance is used for both the as-found and as-left setpoint tolerance for the Unit 2 pressurizer code safety valves during surveillance testing in accordance with the CNP Pump and Valve Inservice Testing Program.

Because of previous failures of the pressurizer code safety valves to meet the  $\pm 1\%$  setpoint tolerance, I&M submitted a request to revise the Unit 1 TS by letter dated May 26, 1995 (Reference 2). The  $\pm 1\%$  setpoint tolerance remained a part of the Unit 1 TS until issuance of Unit 1 License Amendment 214 on March 13, 1997 (Reference 3).

Unit 1 License Amendment 214 increased the Unit 1 pressurizer code safety valve as-found setpoint tolerance from  $\pm 1\%$  to  $\pm 3\%$ . Approval of Unit 1 License Amendment 214 was based on re-analysis and evaluations performed to support operation of Unit 1 at steam generator tube plugging levels up to 30%. A similar request was included in a license amendment request for Unit 2 dated July 11, 1996 (Reference 4). This request was based on re-analysis and evaluations performed to support an increase in approved power level for Unit 2. This request also proposed to add an allowable as-left setpoint tolerance for the pressurizer code safety valves of  $\pm 1\%$  to the Unit 1 and Unit 2 TS 3.4.2 and TS 3.4.3. Because of reasons unrelated to these specific changes, this request was subsequently withdrawn by letter from I&M to the Nuclear Regulatory Commission (NRC) dated September 22, 1998 (Reference 5).

Historically, there have been several instances where one or more of the tested pressurizer code safety valves for Unit 1 and Unit 2 were found to have an as-found lift pressure outside of the  $\pm 1\%$  setpoint tolerance. Because of the original  $\pm 1\%$  setpoint tolerance for Unit 1 and

Unit 2, one or more pressurizer code safety valves have been declared inoperable on seven separate occasions, for a total of fourteen separate cases. For each of these cases, a Licensee Event Report was submitted to the NRC (References 6 through 14). However, the consequences of these events were determined to be insignificant. In all but two cases, the as-found lift pressures for these valves were found to be within an expanded setpoint tolerance of  $\pm 3\%$  of the nominal lift pressure of 2485 psig. In all cases, an evaluation of the as-found lift pressures determined that the reactor coolant system (RCS) pressure boundary Safety Limit of 110% of design pressure (or 2735 psig) would not have been challenged for any of the analyzed events requiring overpressure mitigation by the pressurizer code safety valves. The following table summarizes these events.

Date	Unit	Valve	As-Found Lift Pressure	Deviation from Nominal Setpoint
2/10/89	2	2-SV-45B	2526 psig	+1.65%
12/21/90	1	1-SV-45B	2451 psig	-1.37%
12/21/90	1	1-SV-45C	2548 psig	+2.54%
4/27/92	2	2-SV-45A	2556 psig	+2.86%
4/27/92	2	2-SV-45C	2531 psig	+1.85%
8/12/92	1	1-SV-45B	2514 psig	+1.17%
8/12/92	1	1-SV-45C	2582 psig	+3.90%
4/6/94	1	1-SV-45A	2536 psig	+2.04%
4/6/94	1	1-SV-45B	2535 psig	+2.01%
4/6/94	1	1-SV-45C	2538 psig	+2.13%
2/3/95	2	2-SV-45A	2524 psig	+1.57%
2/3/95	2	2-SV-45C	2538 psig	+2.13%
3/4/98	2	2-SV-45A	2523 psig	+1.53%
3/4/98	2	2-SV-45B	2570 psig	+3.42%

CNP and industry experience with these types of code safety valves has shown that valve setpoint drift is a common phenomenon. Because of this phenomenon, as-found lift pressures throughout the industry have been consistently discovered beyond the original as-left setpoint tolerance of  $\pm 1\%$  of the code safety valve nominal lift pressure. However, experience has also shown that these types of code safety valves infrequently experience drift beyond  $\pm 3\%$  of nominal lift pressure. Both the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code and NUREG-1431 recognize setpoint drift and allow for expanded as-found acceptance limits. Section XI of the ASME Boiler and Pressure Vessel Code (Reference 18) accepts a deviation of up to  $+3\%$  of nominal lift pressure for code safety valves (the ASME Boiler and Pressure Vessel Code does not address a negative tolerance). The Standard Technical Specifications, which are based in part on the ASME Boiler and Pressure Vessel Code, accept a deviation of  $\pm 3\%$  of nominal lift pressure for the pressurizer code safety valves.

The proposed change to increase the as-found setpoint tolerance for the pressurizer code safety valves makes the Unit 2 TS consistent with the Unit 1 TS. The proposed change to add an allowable  $\pm 1\%$  as-left setpoint tolerance for the pressurizer code safety valves for Unit 1 and Unit 2 is consistent with NUREG-1431, Revision 2, dated April 30, 2001.

#### **4.0 Technical Analysis**

I&M proposes to revise the as-found setpoint tolerance for the Unit 2 pressurizer code safety valve from  $\pm 1\%$  to  $\pm 3\%$  of the nominal lift pressure of 2485 psig. In addition, I&M proposes to add an allowable as-left setpoint tolerance of  $\pm 1\%$  for the Unit 1 and 2 pressurizer code safety valves. This is necessary because these valves have been found to consistently experience setpoint drift between surveillance testing intervals. These proposed changes would continue to provide reasonable assurance that the pressurizer code safety valves will operate at a lift setting consistent with the CNP accident and safety analyses throughout each operating cycle.

The pressurizer code safety valves provide, in conjunction with the Reactor Protection System (RPS), overpressure protection for the RCS. Unit 1 and 2 TS 2.1.2, "Reactor Coolant System Pressure," specifies a Safety Limit for the RCS of less than or equal to ( $\leq$ ) 2735 psig. Accident and safety analyses require operation of all three pressurizer code safety valves to limit increases in RCS pressure. Operation of the pressurizer code safety valves, along with the RPS, is credited in several accident and safety analyses to ensure that the RCS Safety Limit of 110% of design pressure (or 2735 psig) is not exceeded.

Because of the proposed increase in the Unit 2 pressurizer code safety valve as-found setpoint tolerance, the Unit 2 pressurizer code safety valves may operate at an actual lift setpoint between 2411 psig and 2559 psig (or  $\pm 3\%$  of 2485 psig). In order for the proposed change to be acceptable, both the lower and upper lift setpoints must be shown to not introduce an adverse interaction during startup, shutdown, and normal operations. In addition, both the lower and upper lift setpoints must not adversely affect the accident and safety analyses. Specifically, the upper lift setpoint of 2559 psig must be shown to limit RCS pressure below the Safety Limit of 110% of design pressure (or 2735 psig).

CNP assessed those accident and safety analyses potentially impacted by an increase in as-found pressurizer code safety valve setpoint tolerance (Reference 16). The following events were evaluated using the current licensing basis LOFTRAN computer code.

- Loss of Reactor Coolant Flow (Reactor Coolant Pump Locked Rotor)
- Loss of External Electrical Load or Turbine Trip
- Loss of Normal Feedwater Flow and Loss of All Alternating Current (AC) Power to the Plant Auxiliaries
- Major Rupture of Main Feedwater Pipe (Feedwater Line Break)



Other accident and safety analyses which are part of CNP's licensing basis, such as large break loss of coolant accident (LOCA), small break LOCA, containment integrity, and steam generator tube rupture, are not impacted by an increase in as-found pressurizer code safety valve setpoint tolerance and were, therefore, not re-analyzed (Reference 15).

The proposed addition of an allowable as-left setpoint tolerance for the Unit 1 and Unit 2 pressurizer code safety valves does not impact CNP's accident and safety analyses and was, therefore, not evaluated. Re-setting the pressurizer code safety valve lift setpoint to within  $\pm 1\%$  tolerance after surveillance testing provides reasonable assurance that the actual operating setpoint of the pressurizer code safety valves will remain within the  $\pm 3\%$  setpoint tolerance band throughout the surveillance interval. In addition, the  $\pm 1\%$  tolerance is not modeled in the CNP accident and safety analyses.

#### Loss of Reactor Coolant Flow (Reactor Coolant Pump Locked Rotor)

##### Initial Conditions

The locked rotor event is examined with respect to peak RCS pressure, departure from nucleate boiling (DNB) analysis, and peak cladding temperature. The increase in the as-found pressurizer code safety valve setpoint tolerance does not impact the locked rotor DNB analysis or peak cladding temperature analyses and was, therefore, not evaluated. The initial conditions assumed in the re-analysis of the peak RCS pressure transient are the same as those currently assumed in CNP's licensing basis analysis.

##### Results

Results indicate that the peak RCS pressure (2645 psia) reached during a locked rotor accident is below the Safety Limit of 110% of design pressure (or 2735 psig). In addition, the peak RCS pressure is less than that which would cause stresses to exceed the faulted condition stress limits. Thus, the proposed increase in as-found pressurizer code safety valve setpoint tolerance to  $\pm 3\%$  is supported by the revised locked rotor event analysis.

#### Loss of External Electrical Load or Turbine Trip

##### Initial Conditions

The complete loss of steam load from full power is examined primarily to show the adequacy of the pressure-relieving devices and to demonstrate core protection.

The analysis of this event includes four different cases where combinations of minimum or maximum core reactivity feedback characteristics are considered and pressurizer pressure control [i.e., actuation of spray and the power operated relief valves (PORVs)] is

assumed to be functioning or ignored. The two cases that assume actuation of pressurizer spray and the PORVs modeled the pressurizer code safety valves as having a  $-3\%$  setpoint tolerance, whereas the two cases that assume pressurizer pressure control is not functioning modeled a  $+3\%$  setpoint tolerance for the pressurizer code safety valves. The plant characteristics and initial conditions assumed in the re-analysis are the same as those currently assumed in CNP's licensing basis analysis. Nominal values were assumed for the initial reactor power, temperature, and pressure, since this accident is analyzed with the Westinghouse revised thermal design procedure (RTDP). The RTDP methodology is part of the existing CNP Unit 2 licensing basis.

## Results

Results of the analyses show that the plant design is such that a loss of load without a direct or immediate reactor trip presents no hazard to the integrity of the RCS or the main steam system. Pressure-relieving devices incorporated in the two systems are adequate to limit the maximum pressures to within the design limits. The integrity of the core is maintained by operation of the RPS, i.e., the departure from nucleate boiling ratio (DNBR) will be maintained above the Safety Limit value. Thus, the proposed increase in as-found pressurizer code safety valve setpoint tolerance to  $\pm 3\%$  is supported by the loss of external electrical load event analysis.

### Loss of Normal Feedwater Flow and Loss of All AC Power to the Plant Auxiliaries

#### Initial Conditions

The CNP Unit 2 analyses for the loss of normal feedwater (LONF) and the loss of all AC power to the station auxiliaries (LOAC) events were recently approved by the NRC. The analyses incorporated changes in the modeling of pressurizer heaters and sprays as discussed in Reference 19. The revised analyses utilized a change in the assumed moderator temperature coefficient, as well as conservatively modeling the pressurizer code safety valves with a  $\pm 3\%$  as-found setpoint tolerance.

## Results

The increase in the as-found pressurizer code safety valve setpoint tolerance to  $\pm 3\%$  does not adversely impact the plant response to this event. Specifically, the pressurizer pressure does not increase to a value that could be influenced by the pressurizer code safety valve setpoint tolerance relaxation since the PORVs are assumed operable during this transient. The overpressure transient experienced during a LONF and an LOAC is bounded by the current loss of load licensing basis analysis, since the turbine trip for the LONF and LOAC transients occurs after reactor scram. This provides additional heat removal via steam flow to the turbine, thereby providing a benefit with respect to peak pressure behavior. Following the turbine trip, the auxiliary feedwater system is capable

of returning the plant to a safe condition by removing the stored and residual heat, thus preventing either overpressurization of the RCS or uncover of the core. As such, the proposed increase in as-found pressurizer code safety valve setpoint tolerance to  $\pm 3\%$  does not adversely impact plant response to a LONF or LOAC event.

#### Major Rupture of Main Feedwater Pipe (Feedwater Line Break)

##### Initial Conditions

A major rupture of a feedwater line is defined as a break in a feedwater line large enough to prevent the addition of sufficient feedwater to the steam generators to maintain shellside fluid inventory. The severity of the feedwater line rupture transient depends on several system parameters including break size, initial reactor power level, and credit taken for the functioning of various control and safety systems. The system parameters and initial conditions assumed in the re-analysis are the same as those currently assumed in CNP's licensing basis analysis.

##### Results

A detailed evaluation has been performed which included sensitivity cases using the LOFTRAN computer code. Sensitivity cases investigated the effects of increasing the pressurizer code safety valve setpoint tolerance to  $\pm 3\%$ . The sensitivity cases yielded results consistent with those presented in the CNP Unit 2 Updated Final Safety Analysis Report (UFSAR) for the major rupture of a main feedwater pipe event. Thus, the proposed increase in as-found pressurizer code safety valve setpoint tolerance to  $\pm 3\%$  does not adversely affect plant response to a main feedwater pipe rupture.

Based on the above, an increase in pressurizer code safety valve setpoint tolerance does not impact CNP's accident and safety analyses and continues to satisfy the applicable acceptance criteria, such as the RCS Safety Limit, overpressure limitations, minimum DNBR, and pressurizer fill criterion. Thus, the proposed changes are acceptable.

## 5.0 **Regulatory Safety Analysis**

### 5.1 **No Significant Hazards Consideration**

I&M has evaluated whether or not a significant hazards consideration is involved with the proposed change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

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

Response: No

#### Probability of Occurrence of an Accident Previously Evaluated -

The proposed changes to pressurizer code safety valve as-found and as-left setpoint tolerance do not affect any accident initiators or precursors. There are no new failure modes for the pressurizer code safety valves created by this change in setpoint tolerance. No adverse interactions with the RCS are created by this change in setpoint tolerance. The lowest possible setpoint of any of the pressurizer code safety valves (including the  $\pm 3\%$  tolerance) is higher than the highest RCS pressures anticipated during shutdown, startup, normal operating, and anticipated operational occurrence conditions. The lowest possible pressurizer code safety valve setpoint is also higher than the setpoint of the PORVs. Therefore, there would not be an adverse interaction between the pressurizer code safety valves and the PORVs. Thus, the probability of occurrence of an accident previously evaluated is not significantly increased.

The format changes for the Unit 2 TS 3.4.3 page do not impact any accident initiators or precursors. Thus, the probability of occurrence of an accident previously evaluated is not significantly increased.

#### Consequences of an Accident Previously Evaluated -

The proposed change to add an allowable as-left setpoint tolerance for the Unit 1 and 2 pressurizer code safety valves does not adversely affect any of the accident and safety analyses. In addition, the proposed increase in the Unit 2 as-found pressurizer code safety valve setpoint tolerance does not adversely affect any of the accident and safety analyses. Both the as-left setpoint of  $\pm 1\%$  and the as-found setpoint of  $\pm 3\%$  of the nominal lift pressure of 2485 psig provides reasonable assurance that the pressurizer code safety valves are capable of performing their design function as assumed in the accident and safety analyses. Even at the highest allowable lift pressure, the pressurizer code safety valves, in

conjunction with the RPS, remain capable of limiting the RCS pressure within the Safety Limit of 110% of design pressure (or 2735 psig). Thus, there will be no increase in offsite doses and the consequences of an accident previously analyzed are not increased.

The format changes for the Unit 2 TS 3.4.3 page do not impact the pressurizer code safety valve's function. Thus, there will be no increase in offsite doses, and the consequences of an accident previously analyzed are not increased.

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 changes to pressurizer code safety valve as-found and as-left setpoint tolerance do not create any new or different accident initiators or precursors. There are no new failure modes for the pressurizer code safety valves created by this change in setpoint tolerance. No adverse interactions with the RCS are created by this change in setpoint tolerance. The lowest possible setpoint of any of the pressurizer code safety valves (including the  $\pm 3\%$  tolerance) is higher than the highest RCS pressures anticipated during shutdown, startup, normal operating, and anticipated operational occurrence conditions. The lowest possible pressurizer code safety valve setpoint is also higher than the setpoint of the PORVs. Therefore, there would not be an adverse interaction between the pressurizer code safety valves and the PORVs. Thus, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

The format changes for the Unit 2 TS 3.4.3 page do not create any new or different accident initiators or precursors. Thus, the possibility of a new or different kind of accident from any previously evaluated is not created.

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

Response: No

The proposed changes do not impact pressurizer code safety valve capability to perform the design function required by the accident and safety analyses, nor do the proposed changes impact the operational characteristics of the pressurizer code safety valves. The pressurizer code safety valves, in conjunction with the RPS, ensure that the RCS Safety Limit of 110% of design pressure (or 2735 psig)

is not exceeded for any analyzed event. Therefore, the proposed changes do not involve a significant reduction in margin of safety.

The format changes for the Unit 2 TS 3.4.3 page do not involve a significant reduction in a margin of safety.

In summary, based upon the above evaluation, I&M has concluded that the proposed changes involve no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

## 5.2 Applicable Regulatory Requirements/Criteria

### 5.2.1 Regulations

The regulatory basis for the design functions of the pressurizer code safety valves requires that the RCS Safety Limit of 110% of design pressure (or 2735 psig) is not exceeded. This Safety Limit is defined in Unit 1 and 2 TS 2.1.2, "Reactor Coolant System Pressure." This capability is required to protect the integrity of the RCS from overpressurization and thereby prevent the release of radionuclides contained in the reactor coolant from reaching the containment atmosphere.

The proposed changes comply with the applicable regulatory requirements and criteria.

### 5.2.2 Design Bases UFSAR

UFSAR Section 4.2 defines the design bases of the Unit 1 and 2 RCS. The reactor vessel and pressurizer were designed to Section III of the ASME Boiler and Pressure Vessel Code (Reference 17), which allows a maximum transient pressure of 2735 psig, or 110% of design pressure (2485 psig). The RCS piping, valves, and fittings were designed to ANSI B31.1, 1967 Edition, which permits a maximum transient pressure of 2985 psig, or 120% of the design pressure (2485 psig).

The design bases of the Unit 1 and 2 pressurizer code safety valves are further defined in UFSAR Sections 4.2.2.8 and 4.3.4. The pressurizer code safety valves are totally enclosed spring-loaded, self-actuated pop-type valves, with a design set pressure of 2485 psig. The pressurizer code safety valves are sized and designed with back-pressure compensation to prevent RCS pressure from exceeding a pressure of 2735 psig, or 110% of design pressure (2485 psig), in accordance with Section III of the ASME Boiler and Pressure Vessel Code. The capacity of the pressurizer code safety valves is determined from accident or transient conditions

that may potentially cause overpressure. The combined capacity of the pressurizer code safety valves is equal to or greater than the maximum surge rate resulting from a complete loss of load without a direct reactor trip or any other control other than the safety valves on the secondary plant opening when the steam pressure reaches the secondary plant safety valve settings. The total capacity of all three pressurizer code safety valves is 1,260,000 pounds per hour of steam with a normal backpressure of 3 psig and a maximum expected backpressure of 350 psig.

The proposed changes do not alter these requirements.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

## **6.0 Environmental Considerations**

I&M has evaluated this license amendment request against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. I&M has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does 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 needs to be prepared concerning the proposed amendment.

## **7.0 Precedent**

In a letter dated November 14, 2000, the NRC issued Amendment Nos. 166 and 110 (Reference 20) to Facility Operating Licenses Nos. DPR-67 and NPF-16 for the Florida Power and Light Company (FPL), St. Lucie Plant, Units 1 and 2, TS which approved an increase in as-found setpoint tolerances for the pressurizer safety valves and main steam safety valves. In addition, the amendments also approved the addition of a  $\pm 1\%$  as-left setpoint tolerance for the pressurizer safety and main steam safety valves.

In a letter dated March 17, 1995, the NRC issued Amendment No. 106 (Reference 21) to Facility Operating License No. NPF-49 for the Northeast Nuclear Energy Company, Millstone Nuclear

Power Plant, Unit 3, TS to relax the as-found setpoint tolerance for the pressurizer safety valves and the main steam safety valves from  $\pm 1\%$  to  $\pm 3\%$ .

Similar to St. Lucie and Millstone, I&M proposes to amend the Unit 1 and Unit 2 TS to increase the as-found pressurizer safety valves setpoint tolerance, and the Unit 2 TS to add an allowable as-left setpoint tolerance of  $\pm 1\%$ . Based on issuance of St. Lucie Plant Amendment Nos. 166 and 110, and Millstone Unit 3 Amendment No. 106, the NRC has already determined that the requested changes are acceptable.

## **8.0 References**

1. NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 2, dated April 30, 2001.
2. I&M to NRC Letter, "Proposed Technical Specification Changes Supported by Analyses to Increase Unit 1 Steam Generator Tube Plugging Limit and Certain Proposed Changes for Unit 2 Supported by Related Analyses," dated May 26, 1995.
3. NRC to I&M Letter, "Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2 – Issuance of Amendments Re: Increased Steam Generator Plugging Limit (TAC Nos. M92587 and M92588)," dated March 13, 1997.
4. I&M to NRC Letter, "Proposed License and Technical Specification Changes Supported by Analyses to Increase Unit 2 Rated Thermal Power and Certain Proposed Changes for Unit 1 Supported by Related Analyses," dated July 11, 1996.
5. I&M to NRC Letter, "Withdraw Operating License and Technical Specifications Change Request for Increased Unit 2 Rated Thermal Power and Related Unit 1 Changes (TAC Nos. 96363 and 96364)," dated September 22, 1998.
6. Unit 2 Licensee Event Report 50-316/89-004-00, "Pressurizer Safety Valve Lift Point Due to Setpoint Drift," dated March 10, 1989.
7. Unit 1 Licensee Event Report 50-315/90-016-00, "Failure of Two Pressurizer Safety Valves to Meet Technical Specification Required Surveillance Test Criteria," dated January 21, 1991.
8. Unit 1 Licensee Event Report 50-315/90-016-01, "Failure of Two Pressurizer Safety Valves to Meet Technical Specification Required Surveillance Test Criteria," dated June 7, 1991.
9. Unit 2 Licensee Event Report 50-316/92-006-00, "Failure of Two Pressurizer Safety Valves to Meet Technical Specification Required Surveillance Test Criteria," dated May 27, 1992.
10. Unit 1 Licensee Event Report 50-315/92-009-00, "Failure of Two Pressurizer Safety Valves to Meet Technical Specification Required Surveillance Test Criteria," dated September 11, 1992.
11. Unit 1 Licensee Event Report 50-315/92-009-01, "Failure of Two Pressurizer Safety Valves to Meet Technical Specification Required Surveillance Test Criteria," dated November 6, 1992.



12. Unit 1 Licensee Event Report 50-315/94-004-00, "Failure of Three Pressurizer Safety Valves to Meet Technical Specification Required Surveillance Test Criteria," dated May 10, 1994.
13. Unit 2 Licensee Event Report 50-316/95-003-00, "Failure of Two Pressurizer Safety Valves to Meet Technical Specification Required Surveillance Test Criteria," dated May 8, 1995.
14. Unit 2 Licensee Event Report 50-316/98-003-00, "Two Pressurizer Safety Valves Fail to Lift within Setpoint Tolerance," dated April 1, 1998.
15. WCAP-14489, "Donald C. Cook Nuclear Plant Unit 2, 3600 MWt Upgrading Program Licensing Report," dated May 1996.
16. Westinghouse letter AEP-01-224, "Non-LOCA Analyses Supporting a 3% Pressurizer Safety Valve Tolerance," dated December 13, 2001.
17. ASME Boiler and Pressure Vessel Code, Section III, "Rule for Construction of Nuclear Power Plant Components"
18. ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components"
19. NRC to I&M Letter, "Donald C. Cook Nuclear Plant, Unit 2 - Issuance of License Amendment (TAC Nos. MA9870 and MA9871)," dated August 23, 2001.
20. NRC to FPL Letter, "St. Lucie Units 1 and 2 – Issuance of Amendments Regarding Technical Specification Changes for the Pressurizer Safety Valve and Main Steam Safety Valve Setpoints (TAC NOS. MA8109 and MA8110)," dated November 14, 2000.
21. NRC to Northeast Nuclear Energy Company Letter, "Issuance of Amendment (TAC NO. M90492)," dated March 17, 1995.

Attachment 1A to C0102-02

TECHNICAL SPECIFICATIONS PAGES  
MARKED TO SHOW PROPOSED CHANGES

REVISED PAGES  
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**3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS**  
**3/4.4 REACTOR COOLANT SYSTEM**

---

**SAFETY VALVES - SHUTDOWN**

**LIMITING CONDITION FOR OPERATION**

3.4.2 A minimum of one pressurizer code safety valve shall be OPERABLE with a lift setting of 2485 PSIG  $\pm 3\%$ .<sup>\*</sup>

**APPLICABILITY:** MODES 4 and 5.

**ACTION:**

With no pressurizer code safety valve OPERABLE:

- a. Immediately suspend all operations involving positive reactivity changes except addition of water from the RWST, provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.8.b.2 (MODE 4) or 3.1.2.7.b.2 (MODE 5), and place an OPERABLE RHR loop into operation in the shutdown cooling mode, and
- b. Immediately render all Safety Injection pumps and all but one charging pump inoperable by removing the applicable motor circuit breakers from the electric power circuit within one hour.

**SURVEILLANCE REQUIREMENTS**

4.4.2 The pressurizer code safety valve shall be demonstrated OPERABLE per Surveillance Requirement 4.4.3.

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<sup>\*</sup> The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

<sup>#</sup> The pressurizer code safety valve shall be reset to the nominal value  $\pm 1\%$  whenever found outside the  $\pm 1\%$  tolerance.

3/4 **LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS**  
3/4.4 **REACTOR COOLANT SYSTEM**

---

SAFETY VALVES - OPERATING

LIMITING CONDITION FOR OPERATION

3.4.3 All pressurizer code safety valves shall be OPERABLE with a lift setting of 2485 PSIG  $\pm 3\%$ .<sup>\*</sup>

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS

4.4.3 No additional surveillance requirements other than those required by Specification 4.0.5.

---

\* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

<sup>#</sup> The pressurizer code safety valve shall be reset to the nominal value  $\pm 1\%$  whenever found outside the  $\pm 1\%$  tolerance.

Attachment 1B to C0102-02

TECHNICAL SPECIFICATIONS PAGES  
MARKED TO SHOW PROPOSED CHANGES

REVISED PAGES  
UNIT 2

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3/4 4-5

3/4 **LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS**  
3/4.4 **REACTOR COOLANT SYSTEM**

---

**SAFETY VALVES - SHUTDOWN**

**LIMITING CONDITION FOR OPERATION**

3.4.2 A minimum of one pressurizer code safety valve shall be OPERABLE with a lift setting of 2485 PSIG  $\pm 1\%$ .\*

**APPLICABILITY:** MODES 4 and 5.

**ACTION:**

With no pressurizer code safety valve OPERABLE:

- a. Immediately suspend all operations involving positive reactivity changes except addition of water from the RWST, provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.8.b.2 (MODE 4) or 3.1.2.7.b.2 (MODE 5), and place an OPERABLE RHR loop into operation in the shutdown cooling mode, and
- b. Immediately render all Safety Injection pumps and all but one charging pump inoperable by removing the applicable motor circuit breakers from the electric power circuit within one hour.

**SURVEILLANCE REQUIREMENTS**

4.4.2 No additional Surveillance Requirements other than those required by Specification 4.0.5.

---

\* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

\* The pressurizer code safety valve shall be reset to the nominal value  $\pm 1\%$  whenever found outside the  $\pm 1\%$  tolerance.

3/4     **LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS**  
3/4.4   **REACTOR COOLANT SYSTEM**

---

**SAFETY VALVES - OPERATING**

**LIMITING CONDITION FOR OPERATION**

3.4.3     All pressurizer code safety valves shall be OPERABLE with a lift setting of 2485 PSIG  $\pm 13\%$ .<sup>#</sup>

**APPLICABILITY:**         MODES 1, 2 and 3.

**ACTION:**

With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT SHUTDOWN within 12 hours.

**SURVEILLANCE REQUIREMENTS**

4.4.3     No additional Surveillance Requirements other than those required by Specification 4.0.5.

---

<sup>\*</sup> The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

<sup>#</sup> The pressurizer code safety valve shall be reset to the nominal value  $\pm 1\%$  whenever found outside the  $\pm 1\%$  tolerance.

Attachment 2A to C0102-02

PROPOSED TECHNICAL SPECIFICATIONS PAGES

REVISED PAGES

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**3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS**  
**3/4.4 REACTOR COOLANT SYSTEM**

---

**SAFETY VALVES - SHUTDOWN**

**LIMITING CONDITION FOR OPERATION**

3.4.2 A minimum of one pressurizer code safety valve shall be OPERABLE with a lift setting of 2485 PSIG  $\pm 3\%$ .<sup>##</sup>

**APPLICABILITY:** MODES 4 and 5.

**ACTION:**

With no pressurizer code safety valve OPERABLE:

- a. Immediately suspend all operations involving positive reactivity changes except addition of water from the RWST, provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.8.b.2 (MODE 4) or 3.1.2.7.b.2 (MODE 5), and place an OPERABLE RHR loop into operation in the shutdown cooling mode, and
- b. Immediately render all Safety Injection pumps and all but one charging pump inoperable by removing the applicable motor circuit breakers from the electric power circuit within one hour.

**SURVEILLANCE REQUIREMENTS**

4.4.2 The pressurizer code safety valve shall be demonstrated OPERABLE per Surveillance Requirement 4.4.3.

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\* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

<sup>##</sup> The pressurizer code safety valve shall be reset to the nominal value  $\pm 1\%$  whenever found outside the  $\pm 1\%$  tolerance.

**3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS**  
**3/4.4 REACTOR COOLANT SYSTEM**

---

**SAFETY VALVES - OPERATING**

**LIMITING CONDITION FOR OPERATION**

3.4.3 All pressurizer code safety valves shall be OPERABLE with a lift setting of 2485 PSIG  $\pm 3\%$ .<sup>\*#</sup>

**APPLICABILITY:** MODES 1, 2 and 3.

**ACTION:**

With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT SHUTDOWN within 12 hours.

**SURVEILLANCE REQUIREMENTS**

4.4.3 No additional surveillance requirements other than those required by Specification 4.0.5.

---

<sup>\*</sup> The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

<sup>#</sup> The pressurizer code safety valve shall be reset to the nominal value  $\pm 1\%$  whenever found outside the  $\pm 1\%$  tolerance.

Attachment 2B to C0102-02

PROPOSED TECHNICAL SPECIFICATIONS PAGES

REVISED PAGES

UNIT 2

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3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS  
3/4.4 REACTOR COOLANT SYSTEM

---

SAFETY VALVES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.4.2 A minimum of one pressurizer code safety valve shall be OPERABLE with a lift setting of 2485 PSIG  $\pm 3\%$ .<sup>\*#</sup>

APPLICABILITY: MODES 4 and 5.

ACTION:

With no pressurizer code safety valve OPERABLE:

- a. Immediately suspend all operations involving positive reactivity changes except addition of water from the RWST, provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.8.b.2 (MODE 4) or 3.1.2.7.b.2 (MODE 5), and place an OPERABLE RHR loop into operation in the shutdown cooling mode, and
- b. Immediately render all Safety Injection pumps and all but one charging pump inoperable by removing the applicable motor circuit breakers from the electric power circuit within one hour.

SURVEILLANCE REQUIREMENTS

4.4.2 No additional Surveillance Requirements other than those required by Specification 4.0.5.

---

\* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

# The pressurizer code safety valve shall be reset to the nominal value  $\pm 1\%$  whenever found outside the  $\pm 1\%$  tolerance.

**3/4     LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS**  
**3/4.4   REACTOR COOLANT SYSTEM**

---

**SAFETY VALVES - OPERATING**

**LIMITING CONDITION FOR OPERATION**

3.4.3     All pressurizer code safety valves shall be OPERABLE with a lift setting of 2485 PSIG  $\pm$  3%.\*#

**APPLICABILITY:**         MODES 1, 2 and 3.

**ACTION:**

With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in HOT SHUTDOWN within 12 hours.

**SURVEILLANCE REQUIREMENTS**

4.4.3     No additional Surveillance Requirements other than those required by Specification 4.0.5.

---

\* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

# The pressurizer code safety valve shall be reset to the nominal value  $\pm$ 1% whenever found outside the  $\pm$ 1% tolerance.