January 17, 2003

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

PALISADES NUCLEAR PLANT
DOCKET 50-255
LICENSE DPR-20
REQUEST FOR ENFORCEMENT DISCRETION – STEAM GENERATOR LOW-LEVEL SETPOINTS

Nuclear Management Company, LLC (NMC), the licensee for the Palisades Nuclear Plant, requests regional enforcement discretion from compliance with certain requirements of Technical Specification Limiting Condition For Operation (LCO) 3.0.3. LCO 3.0.3 requires that action be initiated within one-hour to place the plant, as applicable, in:

- Mode 3 within seven hours
- Mode 4 within 31 hours, and
- Mode 5 within 37 hours

Palisades is operating at approximately 80% power. All four steam generator low-level channels in each steam generator were declared inoperable at 2015 hours eastern standard time (EST) on January 15, 2003, when the low-level trip setpoints were determined to be set below the allowable value specified in Technical Specifications 3.3.1, "Reactor Protective System (RPS) Instrumentation" and 3.3.3, "Engineered Safety Features (ESF) Instrumentation." The root cause of this event has not yet been determined. Changing of these setpoints and post-maintenance testing are scheduled to be complete at approximately 2300 hours EST on January 16, 2003. Without enforcement discretion, Palisades is required to be in at least Mode 3 by 0315 hours EST on January 16, 2003. Enforcement discretion is requested to extend the four completion times in LCO 3.0.3 by an additional 36 hours to avoid a plant shutdown that would impose an unnecessary plant transient without a significant offsetting safety benefit.

The attachment provides the information specified in Nuclear Regulatory Commission (NRC) Regulatory Issue Summary 2001-20, "Revisions to Staff Guidance for Implementing NRC Policy in Notices of Enforcement Discretion," dated November 14, 2001.

A001

This request was verbally transmitted to members of the NRC staff on January 15, 2003, at 2230 hours EST, with subsequent approval being verbally granted January 16, 2003, at 0017 hours EST.

Subsequent to the approval being granted, additional information was evaluated that modified the information communicated to the Staff during the conference call on January 15, 2003. The additional information is included as Section 12 of the Request and does not affect the basis for the approval granted.

SUMMARY OF COMMITMENTS

This letter contains one new commitment and no revisions to existing commitments. The new commitment is:

Ensure compensatory actions provided in section 7 of the attachment are continued for the duration of this enforcement discretion.

I declare under penalty of perjury that the foregoing is true and accurate. Executed on January 17, 2003.

Richard A. Remus
Assistant Plant General Manager, Palisades

CC Regional Administrator, USNRC, Region III
Project Manager, USNRC, NRR
NRC Resident Inspector, Palisades

Attachment

ATTACHMENT

NUCLEAR MANAGEMENT COMPANY
PALISADES NUCLEAR PLANT
DOCKET 50-255

January 17, 2003

REQUEST FOR ENFORCEMENT DISCRETION
STEAM GENERATOR LOW-LEVEL SETPOINTS

8 Pages Follow

REQUEST FOR ENFORCEMENT DISCRETION
STEAM GENERATOR LOW-LEVEL SETPOINTS

1. TECHNICAL SPECIFICATION REQUIREMENT OR LICENSE CONDITION THAT WILL BE VIOLATED

Palisades Technical Specification 3.3.1, "Reactor Protective System (RPS) Instrumentation," requires four associated instrument channels, for the low steam generator (SG) level RPS trip functions, to be operable in Modes 1 and 2, and in Modes 3, 4, and 5 when more than one full-length control rod is capable of being withdrawn and the primary coolant system boron concentration is less than refueling boron concentration. Since Technical Specification 3.3.1 does not provide a condition if all four SG level instrument channels are inoperable, Limiting Condition for Operation (LCO) 3.0.3 applies. LCO 3.0.3 required actions for this condition would be to initiate action within one-hour to place the plant in Mode 3 within seven hours. Actions for placing the plant in Mode 4 within 31 hours, and Mode 5 within 37 hours should not be necessary since LCO 3.3.1 will not be applicable following a normal plant shutdown to Mode 3.

Palisades Technical Specification 3.3.3, "Engineered Safety Features (ESF) Instrumentation," requires four associated instrument channels, for the low SG level auxiliary feedwater actuation signal (AFAS) trip functions, to be operable in Modes 1, 2 and 3. Since Technical Specification 3.3.3 does not provide a condition if all four instruments are inoperable, LCO 3.0.3 applies. LCO 3.0.3 required actions for this condition would be to initiate action within one-hour to place the plant in Mode 3 within seven hours and Mode 4 within 31 hours.

2. CIRCUMSTANCES SURROUNDING THE SITUATION, INCLUDING APPARENT ROOT CAUSES, THE NEED FOR PROMPT ACTION AND RELEVANT HISTORICAL EVENTS

An engineering analysis was being prepared in 1998 to define the uncertainty associated with the steam generator level instrumentation. During the initiation of this engineering calculation a human error was made that applied the pressure compensated uncertainty with the level transmitter in a nonconservative direction. This resulted in applying the calculated setpoints for the Reactor Protective System channels on both steam generators and the Auxiliary Feedwater Pump auto start channels in a manner that would cause the associated trips to actuate below the required technical specification requirement.

3. SAFETY BASIS FOR THE REQUEST, INCLUDING AN EVALUATION OF THE SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES OF THE PROPOSED COURSE OF ACTION, INCLUDING RISK ASSESSMENT

The Low Steam Generator Level trips are provided to trip the reactor in the event of excessive steam demand, to prevent overcooling the primary coolant system (PCS), and loss of feedwater events, to prevent overpressurization of the PCS. The Allowable Value assures that there will be sufficient water inventory in the SG at the time of trip to allow a safe and orderly plant shutdown and to prevent SG dryout assuming minimum auxiliary feedwater (AFW) capacity.

Each SG level is sensed by measuring the differential pressure in the upper portion of the downcomer annulus in the SG. These trips share four level sensing channels on each SG with the AFW actuation signal.

An auxiliary feedwater actuation signal (AFAS) initiates auxiliary feedwater (AFW) flow to both SGs if a low level is indicated in either SG. The AFAS maintains a SG heat sink during the following events:

Main steam line break;
Feedwater line break;
Loss-of-coolant accident; and
Loss of feedwater

The Allowable Value was chosen to assure that AFW flow would be initiated while the SG could still act as a heat sink and steam source, and to assure that a reactor trip would not occur on low level without the actuation of AFW.

The allowable value for the SG low-level setpoints in LCO 3.3.1 and LCO 3.3.3 is ≥ 25.9%. Nuclear Management Company, LLC (NMC) had determined that the existing configuration of these instruments results in a worst-case setpoint of approximately 24.7% for the low SG level reactor trip channels and approximately 25.89% for the AFAS channels. These values, although less than the Technical Specification allowable value, are still greater than the analytical values (18.14% for low SG level reactor trip, and 23.7% for AFAS) contained in the plant safety analysis, after including total loop uncertainties.

This request for enforcement discretion has been assessed from a probabilistic risk standpoint. This assessment determined that there is no net increase in risk by allowing the plant to operate an additional 36 hours while set points are adjusted to restore Technical Specification compliance. The assessment is based on the determination that there is no identified change to be made to the PSA analysis to allow quantification of a change in at power risk. Given the condition that the principal effect is a minor delay in plant trip or AFAS, there is no impact on the performance of equipment modeled in the PSA.

Since there is no increase in core damage probability (CDP), the only risk contribution is the risk associated with a reactor shutdown, which has been estimated to be 1E-06 for Palisades.

The "transition risk" is associated with the change from steady state operation with equipment operation maintained by control systems within established parameters to reduced power states where operation of important equipment transfers to manual control. During the transition, equipment not previously operating will be required to be placed in service. The possibility of failures associated with this equipment is less well known than the current state of equipment required for power operation. Examples include potential electrical or mechanical failures of the reactor protection system and control rod drive system that could occur when the reactor is transitioned from Mode 1 to Mode 3. Manual manipulation of equipment and necessary adjustments in equipment performance to achieve the necessary rate of power reduction introduces the potential for human errors not present or not offset by the system controls in service during power operation. Additionally, the likelihood of transient events that could occur may be increased during the transition. Previous evaluations have shown that the frequency of loss of main feedwater and loss of offsite power events is higher during the transition to lower power levels when the systems are operated in manual. Perturbations in other systems during the shutdown may challenge operators when their principal focus should be maintaining proper functioning of the systems required for the shutdown. As the shutdown progresses, and dependant on the final state to be achieved, the level of redundancy of available equipment to mitigate events is reduced. Equipment that may be available, but that has been placed in manual, would require manual restoration versus automatic response of certain systems during power operations. As a consequence of the power reduction, similar risks are possible during the return to power.

Therefore, the risk associated with maintaining the reactor at power for an additional 36 hours while setpoints are adjusted to restore Technical Specification compliance is lower than the risk associated with performing a reactor shutdown.

4. JUSTIFICATION FOR THE DURATION OF THE NONCOMPLIANCE

NMC proposes to extend each of the four completion times associated with changing plant Modes for Technical Specification LCO 3.0.3 by 36 hours to allow for restoration of steam generator low-level setpoints to operable status. The duration of the noncompliance is limited to the time required to complete the procedure and setpoint changes and conduct required testing, plus margin to accommodate unforeseen circumstances. The 36-hour extension is appropriate based on the projected completion time of 2300 hours eastern standard time (EST) on January 16, 2003. This 36-hour extension would allow the four LCO 3.0.3 completion times to be completed as follows:

Action	Complete By:
Action initiated within one-hour	0915 hours EST on January 17, 2003.
Mode 3 in seven hours	1515 hours EST on January 18, 2003.
Mode 4 in 31 hours	1515 hours EST on January 19, 2003.
Mode 5 in 37 hours	2115 hours EST on January 19, 2003.

The NOED would be in effect until LCO 3.0.3 is exited or any of the above completion times are reached, whichever occurs first.

5. BASIS FOR DETERMINING THAT THE NONCOMPLIANCE WILL NOT BE OF POTENTIAL DETRIMENT TO THE PUBLIC HEALTH AND SAFETY AND THAT NO SIGNIFICANT HAZARD CONSIDERATION IS INVOLVED

Nuclear Management Company (NMC) has evaluated this request for enforcement discretion against the criteria set forth in 10 CFR 50.92 and concludes that the request involves no significant hazards consideration. The evaluation is provided below.

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

   The proposed action does not physically alter any plant structures, systems, or components and does not affect or create new accident initiators or precursors. The allowed outage time for a component is not an accident initiator; therefore, there is no significant increase in the probability of accidents previously evaluated.

   Extending the Technical Specification times for Limiting Condition For Operation (LCO) 3.0.3 does not involve a significant increase in consequences of an accident previously evaluated. Required analytical limits are maintained, and the core damage probability is not increased for the proposed extension to time for LCO 3.0.3 actions. The proposed action does not affect the types or amounts of radionuclides released following an accident, or the initiation and duration of their release. Therefore, the probability of occurrence or the consequences of accidents previously evaluated are not significantly increased.

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

   The proposed action does not physically alter any structures, systems, and components, and does not affect or create new accident initiators or precursors. The accident analysis assumptions and results are unchanged. No new failures or interactions have been created.

   Therefore, the proposed action does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The margin of safety is related to the ability to trip the reactor on a loss of main feedwater event and initiation of auxiliary feedwater flow to the steam generators during the analyzed accidents.

   The proposed action does not involve a significant reduction in the margin of safety because the analytical limits in the safety analysis are maintained. The core damage probability is not increased for the proposed extension to the time for LCO 3.0.3 actions. Although the proposed action deviates from a requirement in LCO 3.0.3, it does not affect any safety limits or other operational parameter limits or setpoints in the Technical Specifications. Therefore, the proposed action does not significantly reduce the margin of safety.

6. BASIS FOR CONCLUDING THAT THE REQUEST WILL NOT INVOLVE ADVERSE CONSEQUENCES TO THE ENVIRONMENT

NMC has evaluated the requested enforcement discretion against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. NMC has determined that the requested action meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9). This determination is based on the fact that the proposed action is being requested as enforcement discretion to a license issued pursuant to 10 CFR 50, and that the change involves no significant hazards considerations.

Although the proposed action involves noncompliance with a requirement of the Technical Specifications,

(i) The proposed action involves no significant hazards consideration.

(ii) There is no significant change in the types or a significant increase in the amounts of any effluent that may be released offsite, since the proposed action does not affect the generation of any radioactive effluent nor does it affect any of the permitted release paths; and

(iii) There is no significant increase in individual or cumulative occupational radiation exposure. The action proposed in this request for enforcement discretion will not significantly affect plant radiation levels, and, therefore, do not significantly affect dose rates and occupational exposure.

Accordingly, the proposed action meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

7. PROPOSED COMPENSATORY MEASURES

The following compensatory measures are in effect for the duration of the enforcement discretion:

a. No additional equipment associated with the Main Steam system, Auxiliary Feedwater system, Main Feedwater system or their support or supported systems will be removed from service.

b. Any planned increase in reactor power will be reviewed by the Plant Review Committee.

c. All switchyard activities will be suspended.

d. An additional licensed operator will be stationed in the control room to ensure reactor trip and AFAS actuation occur before associated steam generator low-level setpoints are exceeded.

8. PLANT REVIEW COMMITTEE APPROVAL

This request was reviewed and approved by the Plant Review Committee.

9. WHICH NOED CRITERION FOR APPROPRIATE PLANT CONDITIONS IS SATISFIED AND HOW IT IS SATISFIED

NMC has evaluated the requested enforcement discretion against the criteria specified in section B of NRC Inspection Manual, Part 9900: "Technical Guidance, Operations – Notices of Enforcement Discretion [NOED]," issued November 2, 2001. This section states, "for an operating plant, the NOED is intended to (a) avoid unnecessary transients as a result of compliance with the license condition and, thus, minimize the potential safety consequences and operational risks, or (b) avoid testing, inspection, or system realignment that is inappropriate for the particular plant conditions."

The NOED criteria in section 2.1.1(a) for an operating plant are satisfied. Palisades is operating at approximately 80% power. Compliance with Technical Specification, 3.0.3 would initiate an unnecessary transient by requiring the plant to shutdown on January 16, 2003. Extending the four completion times for changing plant Modes up to an additional 36 hours beyond the Technical Specification allowed times would allow continued plant operation for only that additional time needed to perform the required repair and testing. Approval of the NOED will preclude the operational risk associated with a transient during the shutdown. No corresponding health and safety benefit is gained by requiring a plant shutdown. Based on the above, the criteria are satisfied.

10. MARKED-UP TECHNICAL SPECIFICATIONS PAGES IDENTIFYING PROPOSED CHANGES (IF APPLICABLE)

No Technical Specification changes are required. A license amendment is not practical because the plant will return to compliance with the existing license in a short period of time.

11. DISCUSSION OF CIRCUMSTANCES INVOLVING SEVERE WEATHER OR OTHER NATURAL EVENTS

The proposed enforcement discretion does not involve severe weather or other natural events.

12. ADDITIONAL INFORMATION

Additional review of the instrument calibration uncertainty data has resulted in the following change to the discussion contained in Section 3 of the Safety Basis for the Request:

The current calibrated level setpoint is 26.91% for the low SG level reactor trip channels and 29.95% for the AFAS channels. The allowable value for the SG low-level setpoints in LCO 3.3.1 and LCO 3.3.3 is ≥ 25.9%. NMC had determined that the existing configuration of these instruments results in a worst-case setpoint of 24.71% for the SG low-level reactor trip channels, and 27.75% for the AFAS channels. The SG low-level reactor trip channels are less than the Technical Specification allowable value. However, the AFAS channels remain above the Technical Specification allowable value. Both the AFAS and SG low-level reactor trip values are greater than the analytical limit (18.14% for low SG level reactor trip, and 23.7% for AFAS) contained in the plant safety analysis, after including total loop uncertainties.

Therefore, the AFAS channels remain operable in their current condition. Based on this information, Section 1, "Technical Specification Requirement or License Condition That Will Be Violated," only pertains to Technical Specification 3.3.1.

The information presented above does not affect the basis for which the NRC granted enforcement discretion.