7590-01-P

NUCLEAR REGULATORY COMMISSION

Notice of Availability of Model Application Concerning Technical Specifications Improvement Regarding Scram Discharge Volume Vent and Drain Valves Actions for Boiling Water Reactors Using the Consolidated Line Item Improvement Process

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of Availability.

SUMMARY: Notice is hereby given that the staff of the Nuclear Regulatory Commission (NRC) has prepared a model safety evaluation (SE), a model no significant hazards consideration (NSHC) determination, and a model license amendment application relating to a change in the technical specifications (TSs) required actions for inoperable vent and drain valves for the scram discharge volume (SDV) for boiling water reactors (BWRs). The purpose of these models is to permit the NRC to efficiently process amendments that propose to incorporate this change into plant-specific TS. Licensees of nuclear power reactors to which the models apply may request amendments utilizing the model application.

DATES: The NRC staff issued a *Federal Register* Notice (68 FR 8637, February 24, 2003) which provided a model SE and a model NSHC determination related to changing the completion times to address inoperable valves in SDV vent or drain lines. The NRC staff hereby announces that the model SE and NSHC determination may be referenced in plant-specific applications. The staff has posted a model application on the NRC web site to assist licensees in using the consolidated line item improvement process (CLIIP) to incorporate this change. The NRC staff can most efficiently consider applications based upon the model application if the application is submitted within a year of this *Federal Register* Notice.

FOR FURTHER INFORMATION CONTACT: William Reckley, Mail Stop: O-7D1, Division of Licensing Project Management, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone 301-415-1323.

SUPPLEMENTARY INFORMATION:

Background

Regulatory Issue Summary 2000-06, "Consolidated Line Item Improvement Process for Adopting Standard Technical Specifications Changes for Power Reactors," was issued on March 20, 2000. The CLIIP is intended to improve the efficiency of NRC licensing processes. This is accomplished by processing proposed changes to the standard technical specifications (STS) in a manner that supports subsequent license amendment applications. The CLIIP includes an opportunity for the public to comment on proposed changes to the STS following a preliminary assessment by the NRC staff and finding that the change will likely be offered for adoption by licensees. The CLIIP directs the NRC staff to evaluate any comments received for a proposed change to the STS and to either reconsider the change or to proceed with announcing the availability of the change for proposed adoption by licensees. Those licensees opting to apply for the subject change to TS are responsible for reviewing the staff's evaluation, referencing the applicable technical justifications, and providing any necessary plant-specific information. Each amendment application made in response to the notice of availability will be processed and noticed in accordance with applicable rules and NRC procedures.

This notice involves changes to required actions for inoperable SDV vent and drain valves for BWRs. This proposed change was proposed for incorporation into the STS by the BWR Owners Group as Technical Specification Task Force (TSTF)-404, Revision 0.

Applicability

This proposed change to required actions for inoperable SDV vent and drain valves is applicable to BWRs.

The CLIIP does not prevent licensees from requesting an alternative approach or proposing the changes without referencing the model SE and the NSHC. Variations from the

approach recommended in this notice may, however, require additional review by the NRC staff and may increase the time and resources needed for the review.

Public Notices

In a notice in the *Federal Register* dated February 24, 2003 (68 FR 8637), the staff requested comment on the use of the CLIIP for proposed changes to the required actions and completion times for inoperable SDV vent and drain valves at BWRs.

TSTF-404, as well as the NRC staff's SE and model application, may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, Public File Area 01 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agency wide Documents Access and Management System's (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, 301-415-4737, or by e-mail to pdr@nrc.gov.

The staff received only informal comments regarding typographical and editorial errors in the model SE and NSHC determination. A specific change involves correcting the abbreviation for scram discharge volume in the model SE and NSHC determination (from S.V. to SDV). Licensees may reference in their plant-specific applications the corrected SE, NSHC determination, and environmental assessment provided below.

MODEL SAFETY EVALUATION

U.S. Nuclear Regulatory Commission

Office of Nuclear Reactor Regulation

Consolidated Line Item Improvement
Technical Specifications Task Force (TSTF) Change TSTF-404
Scram Discharge Volume Vent and Drain Valves

1.0 INTRODUCTION

By application dated [ ], [Licensee] (the licensee) requested changes to the Technical Specifications (TSs) for [facility]. The proposed changes would revise the required action within TS [3.1.8, "Scram Discharge Volume (SDV) Vent and Drain Valves"] for the condition of having one or more SDV vent or drain lines with one valve inoperable. These changes are based on Technical Specifications Task Force (TSTF) change traveler TSTF-404 (Revision 0) that has been approved generically for the BWR [boiling water reactor]/4[6] Standard Technical Specifications (STS), NUREG-1433 [1434], Revision 2. A notice announcing the availability of this proposed TS change using the consolidated line item improvement process (CLIIP) was published in the Federal Register on [ ] (68 FR yyyyy).

2.0 REGULATORY EVALUATION

NRC regulations and review standards such as Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 of Title 10 of the Code of Federal Regulations (10 CFR), include specific requirements for reactor protection and reactivity control systems. The reactor protection systems for BWRs use a hydraulic system to insert control rods into the reactor core. During an actuation of the reactor protection system (a scram), water is exhausted from the control rod drive mechanisms to the SDVs. Proper maintenance and operation of the SDVs in terms of instrumentation and limiting water volumes are essential for assuring the reliability of the reactor protection system (see NRC Bulletin 80-17, "Failure of

Control Rods to Insert During A Scram at a BWR," related Orders to specific facilities, and information provided in plant final safety analysis reports and TS Bases). Maintaining the SDVs to ensure that accumulated water does not hamper or slow the insertion of control rods requires vent and drain valves. The vent and drain valves isolate during a scram to limit the amount of coolant discharged so that adequate core cooling is maintained and offsite doses remain within regulatory limits.

Specific regulatory requirements for SDV vent and drain valves are defined in TS [3.1.8, "Scram Discharge Volume (SDV) Vent and Drain Valves."] The existing limiting condition for operation [3.1.8], requires that each SDV vent and drain valve be operable. The operability of all SDV vent and drain valves ensures that the SDV vent and drain valves will close during a scram to contain reactor water discharged to the SDV piping. Since the vent and drain lines are provided with two valves in series, the single failure of one valve in the open position will not impair the isolation function of the system. Additionally, the valves are required to open on scram reset and during plant operation to control the amount of water accumulating in the SDV

If one or more SDV vent and drain lines have a single valve that is inoperable, the existing required action is to restore the valve(s) to operable status within 7 days. If an inoperable valve is not restored to operable status, a plant shutdown to MODE 3 is required within 12 hours. If one or more SDV vent or drain lines have both valves inoperable, the associated line must be isolated within 8 hours. In this condition, the plant is allowed to operate indefinitely. A note associated with the required action clarifies that the valves may be opened under administrative controls to allow draining of the SDV. The existing SDV vent and drain valve required actions are inconsistent in that, although the operational and safety concerns are similar for having one or both valves in a line being inoperable, the actions for a single inoperable valve do not allow for the isolation of the line and administrative controls to support the draining of the SDV.

The proposed change would revise the required actions to be more consistent with the safety significance of one inoperable valve in a SDV line versus two inoperable valves in an SDV line.

3.0 TECHNICAL EVALUATION

The proposed changes to TS 3.1.8 are:

1. Required Action A.1 is revised from restoring the single inoperable SDV vent and drain valve in one or more SDV vent and drain lines to operable status to isolating the associated line.
2. The Note to Required Action B.1 which allows an isolated line to be unisolated under administrative controls for the purpose of draining and venting the SDV is moved to a note that applies to both Conditions A (single inoperable valve) and B (both valves inoperable).

With one SDV vent or drain valve inoperable in one or more lines, the isolation function would be maintained since the redundant valve in the affected line would perform its safety function of isolating the SDV. The current ACTION statement allows 7 days to repair the inoperable valve; the proposed change is to allow for the isolation of the affected line and continue operation. If the affected line is not isolated within the 7-day time period (or the inoperable valve is not restored), the licensee would then be required to proceed to MODE 3 in the next 12 hours. Maintaining the 7-day Completion Time is acceptable because of the low probability of the concurrent events of a scram within the 7 days of the Completion Time and a failure of the redundant valve(s). Alternately, if the inoperable valve was initially closed, there would be ample time and warning available to drain the SDV before an automatic scram would occur due to SDV high level.

The allowance to administratively open a line that is isolated to comply with the actions (to permit draining and venting the SDV) is allowed by existing Required Action B.1. This

allowance is being moved to apply to all ACTIONS based on the change proposed to Action A. This would allow any accumulated water in the line to be drained, to preclude a reactor scram on SDV high level. A reactor scram is initiated if the SDV water level in the instrument volume exceeds a specified setpoint. The setpoint is chosen so that all control rods are inserted before the SDV has insufficient volume to accept a full scram. Regarding the isolation of the SDV, the remaining operable SDV vent and drain valve(s) would close automatically on a scram signal to isolate the lines. Or, if both valves in a line were inoperable (and opened under this provision), the reactor coolant release could be terminated by resetting the scram from the control room, or by manually closing the valves. Resetting the scram automatically closes the scram outlet valves, isolating the control rod drive discharge path to the SDV.

Based on the low probability of an event occurring during the defined Completion Time associated with this condition, the subsequent isolation of the affected lines, and the ability to open and drain the lines before an automatic scram due to SDV high water level, the proposed change maintains the necessary safety features and is therefore acceptable. [Note-optional section if licensee provides markup of affected Bases pages: The change to TS [3.1.8] requires that the licensee revise the discussion in the associated Bases section. Although the licensee's application included possible wording for the revised Bases discussion for TS [3.1.8], the licensee will formally address the change to the Bases in accordance with [the Bases Control Program or its administrative procedure for revising Bases]. The staff does not believe that the Bases change will require prior NRC approval when evaluated against the criteria in 10 CFR 50.59, "Changes, tests, and experiments," and, therefore, agrees that the revision of the Bases to TS [3.1.8] should be addressed separately from this amendment and should be included in a future update of the TS Bases in accordance with [the Bases Control Program or the licensee's administrative controls].

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the [ ] State official was notified of the proposed issuance of the amendments. The State official had [(1) no comments or (2) the following comments - with subsequent disposition by the staff].

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (FR). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

MODEL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Description of Amendment Request: The proposed amendment revises TS [3.1.8, "Scram Discharge Volume (SDV) Vent and Drain Valves,"] to allow a vent or drain line with one inoperable valve to be isolated instead of requiring the valve to be restored to Operable status within 7 days.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

Criterion 1 - The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

A change is proposed to allow the affected SDV vent and drain line to be isolated when there are one or more SDV vent or drain lines with one valve inoperable instead or requiring the valve to be restored to operable status within 7 days. With one SDV vent or drain valve inoperable in one or more lines, the isolation function would be maintained since the redundant valve in the affected line would perform its safety function of isolating the SDV. Following the completion of the required action, the isolation function is fulfilled since the associated line is isolated. The ability to vent and drain the SDVs is maintained and controlled through administrative controls. This requirement assures the reactor protection system is not adversely affected by the inoperable valves. With the safety functions of the valves being maintained, the probability or consequences of an accident previously evaluated are not significantly increased.

Criterion 2 - The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant

operation. Thus, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

Criterion 3 - The proposed change does not involve a significant reduction in the margin of safety.

The proposed change ensures that the safety functions of the SDV vent and drain valves are fulfilled. The isolation function is maintained by redundant valves and by the required action to isolate the affected line. The ability to vent and drain the SDVs is maintained through administrative controls. In addition, the reactor protection system will prevent filling of an SDV to the point that it has insufficient volume to accept a full scram. Maintaining the safety functions related to isolation of the SDV and insertion of control rods ensures that the proposed change does not involve a significant reduction in the margin of safety.

Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Dated at Rockville, Maryland, this 8th day of April 2003.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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Criterion 3 - The proposed change does not involve a significant reduction in the margin of safety.

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