

Industry/TSTF Standard Technical Specification Change Traveler

Elimination of Requirements for a Post Accident Sampling System (PASS)

Classification: 1) Technical Change

Priority: 1) High

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

The proposed change brackets Section 5.5.3, "Post Accident Sampling," and adds a Reviewer's Note to indicate that the program may be eliminated based on the implementation of NEDO-32991, Revision 0, "Regulatory Relaxation For BWR Post Accident Sampling Stations (PASS)," and the associated NRC Safety Evaluation dated June 12, 2001.

The proposed change also modifies TS Bases 3.3.3, "PAM Instrumentation, " Required Action D.1 to indicate that with the implementation of NEDO-32991, Revision 0, "Regulatory Relaxation For BWR Post Accident Sampling Stations (PASS)," other core damage assessment capabilities may be used to provide information for operator decisions in lieu of the PASS as the basis for the 72 hour Completion Time.

Justification:

Background

NEDO-32991, Revision 0, "Regulatory Relaxation For BWR Post Accident Sampling Stations (PASS)," evaluated the post accident sampling system (PASS) requirements to determine their contribution to plant safety and accident recovery. The topical report considered the progression and consequences of core damage accidents and assessed the accident progression with respect to plant abnormal and emergency operating procedures, severe accident management guidance, and emergency plans. NEDO-32991, Rev. 0, concluded that the current PASS samples specified in NUREG-0737, "Clarification of TMI Action Plan Requirements," may be eliminated (i.e., remove the requirements to perform the sampling from the licensing basis).

Licensee's implementing NEDO-32991, Rev. 0, and the associated NRC Safety Evaluation dated June 12, 2001, may delete the program requirements of Section 5.5.3.

Proposed Change

Program 5.5.3, Post Accident Sampling, is bracketed and modified by a Reviewer's Note. Bases which reference the Post Accident Sampling System are modified.

6/27/2001

Justification

NEDO-32991, Rev. 0, provides the justification for the elimination of PASS. The NRC issued a safety evaluation dated June 12, 2001 approving NEDO-32991 with additional licensee required actions.

Additional Information/Comments Related to the Proposed Changes

With the elimination of PASS, plant specific TS Section 5.5.2, 'Primary Coolant Sources Outside Containment,' may also need to be revised. Section 5.5.2, specifies the program to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident. The NUREG further states: 'The systems include [the Low Pressure Core Spray, High Pressure Coolant Injection, Residual Heat removal, Reactor Core Isolation Cooling, hydrogen recombiner, process sampling, and Standby Gas Treatment].' Although NUREG-1433, Rev. 1, does not specifically call out in the brackets 'Nuclear Sampling System (Post Accident Sampling System only),' a number of plants have the PASS specified in Section 5.5.2. With the elimination of the PASS requirements, modifications may be performed such that the PASS system is isolated and would no longer have the capability to contain highly radioactive fluids. Therefore, if the PASS is isolated from the capability to contain highly radioactive fluids, it is acceptable to revise TS Section 5.5.2 to eliminate the PASS from the Primary Coolant Sources Outside Containment program.

TS Section 5.4.1b requires written procedures shall be established, implemented, and maintained covering (in part) the emergency operating procedures required to implement the requirements of NUREG-0737 and to NUREG-0737, Supplement 1, as stated in Generic Letter 82-33. NUREG-0737, Item I.C.1, 'Guidance for the Evaluation and Development of Procedures for Transients and Accidents,' as clarified by Supplement 1 to NUREG-0737 required licensees to perform analyses of transients and accident, prepare emergency procedure guidelines, and upgrade emergency operating procedures. There may be actions specified in emergency operating procedures based on NUREG-0737 and NUREG-0737, Supplement 1 requirements. However, the intent of this specification is only for establishing, implementing, and maintaining emergency operating procedures. As such, elimination of a NUREG-0737 requirement, such as the elimination of the requirement for a Post Accident Sampling System, does not impact the TS requirement associated with emergency operating procedures.

6/27/2001

Determination of No Significant Hazards Considerations

In accordance with the criteria set forth in 10 CFR 50.92, the Industry has evaluated these proposed Improved Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

The PASS was originally designed to perform many sampling and analysis functions. These functions were designed and intended to be used in post accident situations and were put into place as a result of the TMI-2 accident. The specific intent of the PASS was to provide a system that has the capability to obtain and analyze samples of plant fluids containing potentially high levels of radioactivity, without exceeding plant personnel radiation exposure limits. Analytical results of these samples would be used largely for verification purposes in aiding the plant staff in assessing the extent of core damage and subsequent offsite radiological dose projections. The system was not intended to and does not serve a function for preventing accidents and its elimination would not affect the probability of accidents previously evaluated. In the 20 years since the TMI-2 accident and the consequential promulgation of post accident sampling requirements, operating experience has demonstrated that a PASS provides little actual benefit to post accident mitigation. Past experience has indicated that there exists in-plant instrumentation and methodologies available in lieu of a PASS for collecting and assimilating information needed to assess core damage following an accident. Furthermore, the implementation of Severe Accident Management Guidance (SAMG) emphasizes accident management strategies based on in-plant instruments. These strategies provide guidance to the plant staff for mitigation and recovery from a severe accident. Based on current severe accident management strategies and guidelines, it is determined that the PASS provides little benefit to the plant staff in coping with an accident. The regulatory requirements for the PASS can be eliminated without degrading the plant emergency response. The emergency response, in this sense, refers to the methodologies used in ascertaining the condition of the reactor core, mitigating the consequences of an accident, assessing and projecting offsite releases of radioactivity, and establishing protective action recommendations to be communicated to offsite authorities. The elimination of the PASS will not prevent an accident management strategy that meets the initial intent of the post-TMI-2 accident guidance through the use of the SAMGs, the emergency plan (EP), the emergency operating procedures (EOP), and site survey monitoring that support modification of emergency plan protective action recommendations (PARs). Therefore, the elimination of PASS requirements from Technical Specifications (TS) (and other elements of the licensing bases) does not involve a significant increase in the consequences of any accident previously evaluated.

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

The elimination of PASS related requirements will not result in any failure mode not previously analyzed. The PASS was intended to allow for verification of the extent of reactor core damage and also to provide an input to offsite dose projection calculations. The PASS is not considered an accident precursor, nor does its existence or elimination have any adverse impact on the pre-accident state of the reactor core or post accident confinement of radionuclides within the containment building. Therefore, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

The elimination of the PASS, in light of existing plant equipment, instrumentation, procedures, and programs that provide effective mitigation of and recovery from reactor accidents, results in a neutral impact to the margin of safety. Methodologies that are not reliant on PASS are designed to provide rapid assessment of current reactor core conditions and the direction of degradation while effectively responding to the event in order to mitigate the consequences of the accident. The use of a PASS is redundant and does not provide quick recognition of core events or rapid response to events in progress. The intent of the requirements established as a result of the TMI-2 accident can be adequately met without reliance on a PASS. Therefore, this change does not involve a significant reduction in the margin of safety. Based upon the reasoning presented above and the previous discussion of the amendment request, the requested change does not involve a significant hazards consideration.

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Revision History

OG Revision 0

Revision Status: Active

Next Action: NRC

Revision Proposed by: BWROG

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 08-Mar-01

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 08-Mar-01

TSTF Review Information

TSTF Received Date: 24-Jun-01 Date Distributed for Review 27-Jun-01

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:
BWROG Only.

TSTF Resolution: Approved Date: 27-Jun-01

NRC Review Information

NRC Received Date: 28-Jun-01

NRC Comments:
(No Comments)

Final Resolution: NRC Action Pending

Final Resolution Date:

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

Action 3.3.3.1.D Bases PAM Instrumentation

5.5.e

Post Accident Sampling

6/27/2001

INSERT 1

----- Reviewer's Note -----

This program may be eliminated based on the implementation of NEDO-32991, Revision 0, "Regulatory Relaxation For BWR Post Accident Sampling Stations (PASS)," and the associated NRC Safety Evaluation dated June 12, 2001.

INSERT 2

----- Reviewer's Note -----

Implementation of NEDO-32991, Revision 0, "Regulatory Relaxation For BWR Post Accident Sampling Stations (PASS)," and the associated NRC Safety Evaluation dated June 12, 2001, allows other core damage assessment capabilities in lieu of the Post Accident Sampling System.

BASES

ACTIONS (continued)

C.1

When one or more Functions have two required channels that are inoperable (i.e., two channels inoperable in the same Function), one channel in the Function should be restored to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur. Condition C is modified by a Note that excludes hydrogen monitor channels. Condition D provides appropriate Required Actions for two inoperable hydrogen monitor channels.

Insert 2

D.1

When two hydrogen monitor channels are inoperable, one hydrogen monitor channel must be restored to OPERABLE status within 72 hours. The 72 hour Completion Time is based on the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit; the length of time after the event that operator action would be required to prevent hydrogen accumulation from exceeding this limit; and the availability of the hydrogen recombiners, the Hydrogen Purge System, and the Post Accident Sampling System.

E.1

or other core damage assessment capabilities.]

This Required Action directs entry into the appropriate Condition referenced in Table 3.3.3.1-1. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met any Required Action of Condition C or D, as applicable, and the associated Completion Time has expired, Condition E is entered for that channel and provides for transfer to the appropriate subsequent Condition.

F.1

For the majority of Functions in Table 3.3.3.1-1, if any Required Action and associated Completion Time of Condition C or D are not met, the

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Insert 2 →

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When two hydrogen monitor channels are inoperable, one hydrogen monitor channel must be restored to OPERABLE status within 72 hours. The 72 hour Completion Time is reasonable, based on the backup capability of the Post Accident Sampling System to monitor the hydrogen concentration for evaluation of core damage and to provide information for operator decisions. Also, it is unlikely that a LOCA that would cause core damage would occur during this time.

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5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include [the Low Pressure Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, hydrogen recombiner, process sampling, and Standby Gas Treatment]. The program shall include the following:

- a. Preventive maintenance and periodic visual inspection requirements and
- b. Integrated leak test requirements for each system at least once per [18] months.

The provisions of SR 3.0.2 are applicable.

5.5.3

Post Accident Sampling

Insert 1

This program provides controls that ensure the capability to obtain and analyze reactor coolant, radioactive gases, and particulates in plant gaseous effluents and containment atmosphere samples under accident conditions. The program shall include the following:

- a. Training of personnel,
- b. Procedures for sampling and analysis, and
- c. Provisions for maintenance of sampling and analysis equipment.

5.5.4 Radioactive Effluent Controls Program

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the ODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

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