



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ENCLOSURE 1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REVIEW OF BWR OWNERS GROUP REPORT GENE-770-06-1
ON JUSTIFICATION FOR EXTENDING SURVEILLANCE TEST INTERVALS AND
ALLOWED OUT-OF-SERVICE TIMES FOR SELECTED BWR
ACTUATION INSTRUMENTATION

1.0 SUMMARY

The staff has reviewed the General Electric Company (GE) Topical Report GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications" (Ref. 1), issued by the BWR Owners Group to support proposed extensions of selected actuation instrumentation surveillance test intervals (STIs) and allowed out-of-service times (AOTs) for test and repair. In particular, bases are provided for extending STIs from 31 days to 92 days. Additional justifications are provided for extending 1) AOTs for surveillance test from 2 hours to 6 hours and 2) AOTs for repair from 1 or 2 hours to 12 hours for instrumentation common to the RPS or 24 hours for all other instrumentation considered.

2.0 BACKGROUND

The procedure used by the BWR Owners Group (BWROG) in GENE-770-06-1 to justify STI and AOT relaxation was to demonstrate similarity in components, configuration, and function with previously reviewed actuation instrumentation for which STI and AOT relaxations were approved. This procedure was applied to all the identified actuation instrumentation except for that for RCIC; RCIC actuation instrumentation proposed relaxations were evaluated in topical report GENE-770-06-2 (Ref. 2) and approved in a separate SER (Ref. 3).

3.0 APPROACH

Instead of applying criteria consisting of specific percent limits on changes in system unavailability or failure frequency due to STI and AOT changes, as utilized in previous NRC staff SERs granting STI and AOT relaxations, the staff judges that if STI and AOT changes are proposed for actuation instrumentation of type similar to that used in the Reactor Protection System (RPS), Emergency Core Cooling System (ECCS), or Containment Isolation, which have been previously analyzed and approved, the previous analyses may be used to justify the proposed relaxations. This approval approach is justified provided that component, configuration, redundancy, and action similarity is demonstrated in each case being examined for approval of proposed STI and AOT relaxation.

4.0 NRC ACTION

The NRC staff engaged the services of EG&G Idaho (WTO) to review the approach used and comparative analyses performed in Ref. 1. This review was performed to determine the adequacy of the comparative methodology used to establish the bases for the modifications of STIs and AOTs for the following BWR actuation instrumentation:

- For the BWR4 plants: Plant Systems Actuation Instrumentation, Main Control Room Environmental Control System (MCRECS), and Safety/Relief Valves Low Low Set Function.
- For the BWR6 plants: Plant Systems Actuation Instrumentation, Control Room Fresh Air Actuation Instrumentation (CRFA), Safety/Relief Valves, and Safety/Relief Valves Low Low Set (LLS) Function.
- For the BWR4 and BWR6 plants: End of Cycle-Recirculation Pump Trip (EOC-RPT) System Actuation Instrumentation, ATWS-RPT System Actuation Instrumentation, and Control Rod Block Instrumentation.

The NRC staff finds the BWROG comparative analysis, as augmented by acceptable BWR Owners Group (BWROG) responses to NRC staff questions, sufficient to justify the requested STI and AOT relaxations.

5.0 CONCLUSIONS

On the basis of its review of the EG&G Idaho (WTO) TER, as augmented by acceptable BWR Owners Group (BWROG) responses to NRC staff questions, the staff endorses the finding therein that the methods used and results obtained in GENE-770-06-1 were verified.

The staff finds the bases provided for extending STIs from 31 days to 92 days adequate. The staff also finds adequate justification in the BWROG analyses for extending, for the actuation instrumentation enumerated in Section 4.0, AOTs for surveillance test from 2 hours to 6 hours, and AOTs for repair from 1 or 2 hours to 12 hours for instrumentation common to the RPS, or 24 hours for all other instrumentation considered.

Table 1 lists plant-specific conditions that each licensee or applicant must meet to make any proposed STI or AOT changes fully acceptable. Table 2 summarizes the approved changes.

6.0 REFERENCES

1. W. P. Sullivan, et al., "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," General Electric Company, GENE-770-06-1, February 1991.

2. W. P. Sullivan, et al., "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," General Electric Company, GENE-770-06-2, February 1991.
3. Safety Evaluation by the Office of Nuclear Reactor Regulation--"Review of BWR Owners Group Report GENE-770-06-2 on Justification for Extending Surveillance Test Intervals and Allowed Out-of-Service Times for BWR Reactor Core Isolation Cooling System Instrumentation," September 13, 1991.

TABLE 1

CONDITIONS TO CLOSE OUT PLANTS

For plant-specific application of the technical specification (TS) changes for the actuation instrumentation that are proposed, the licensee must:

- (1) Confirm the applicability of the generic analyses to the plant.
- (2) Confirm that any increase in instrument drift due to the extended STIs is properly accounted for in the set point calculation methodology.
(For additional information on this issue, see letter from C. E. Rossi to R. F. Janecek, dated April 27, 1988).

TABLE 2

ACTUATION INSTRUMENTATION
APPROVED STI AND AOT CHANGES

System ¹	Plant Type	STI	Test AOT	Repair AOT
FW/MTT	BWR4	31d → 92d	2hr → 6hr	—————
EOC/RPT	BWR4/6	31d → 92d	2hr → 6hr	1hr → 12hr
ATWS/RPT	BWR4/6	31d → 92d	2hr → 6hr	1hr → 24hr
SR Valves	BWR6	31d → 92d	2hr → 6hr	—————
LLS	BWR4	31d → 92d	2hr → 6hr	—————
LLS	BWR6	31d → 92d	2hr → 6hr	—————
RHR Cont. Spr.	BWR6	31d → 92d	2hr → 6hr	1hr → 24hr*
FW/MTT	BWR6	31d → 92d	2hr → 6hr	—————
SPMU Sys.	BWR6	31d → 92d	2hr → 6hr	1hr → 24hr*
MCRECS	BWR4	31d → 92d	2hr → 6hr	2hr → 24hr
CRFA	BWR6	31d → 92d	2hr → 6hr	—————
CR Block	BWR4/6	—————	2hr → 6hr	1hr → 12hr
SP & DW Spr.	BWR4	31d → 92d**	2hr → 6hr**	—————

*Approval contingent upon removal of channel(s) for repair not causing loss of function.

**For automatically initiated systems conforming to GENE 770-06-1 Bases only.

¹Nomenclature

FW/MTT: Feedwater/Main Turbine Trip	SPMU: Suppression Pool Makeup
EOC/RPT: End-of-Cycle Recirculation Pump Trip	MCRECS: Main Control Room Environmental Control System
ATWS/RPT: Anticipated Transient Without Scram-Recirculation Pump Trip	CRFA: Control Room Fresh Air
SR: Safety/Relief	CR Block: Control Pod Block
LLS: Low-Low Set	SP & DW Spr: Suppression Pool & Drywell Spray System
RHR Cont. Spr.: Residual Heat Removal Containment Spray	