



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENCLOSURE 4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 199 TO FACILITY OPERATING LICENSE NO. DPR-33
AMENDMENT NO. 216 TO FACILITY OPERATING LICENSE NO. DPR-52
AMENDMENT NO. 172 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3

DOCKET NOS. 50-259, 50-260, AND 50-296

1.0 INTRODUCTION

By letter dated March 25, 1992, as supplemented on January 29, 1993 and August 27, 1993, the Tennessee Valley Authority (the licensee) proposed to incorporate programmatic controls for radiological effluents and radiological environmental monitoring in the Administrative Controls section of the Technical Specifications (TS) consistent with the requirements of 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50. At the same time, the licensee proposed to transfer the procedural details of the Radiological Effluent Technical Specifications (RETS) from the TS to the Offsite Dose Calculation Manual (ODCM) and to the Process Control Program (PCP) for solid radioactive wastes as appropriate. With these changes, the specifications related to RETS reporting requirements were simplified. Changes to the definitions of the ODCM and PCP were proposed consistent with these changes. Guidance on these proposed changes was provided to all power reactor licensees and applicants by Generic Letter 89-01 dated January 31, 1989. The staff's proposed finding of no significant hazards considerations is unaffected by the August 27, 1993, supplement. The licensee also proposed to revise and delete certain requirements pertaining to the Off-Gas system hydrogen monitors.

2.0 EVALUATION

2.1 Radiological Effluent Technical Specifications (RETS)

The licensee's proposed changes to the TS associated with the removal of the RETS conform to the guidance provided in Generic Letter 89-01 and are addressed below.

- (a) The licensee has proposed to incorporate programmatic controls for radiological effluents and radiological environmental monitoring in Specification 6.8.4, "Procedures and Programs," of the TS as noted in the guidance provided in Generic Letter 89-01. The programmatic controls ensure that programs are established, implemented, and

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maintained to ensure that operating procedures are provided to control radioactive effluents consistent with the requirements of 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50. The amendments proposed in this area are consistent with the guidance provided in the generic letter and are therefore acceptable.

- (b) The licensee has proposed changes that will relocate TS definitions 1.0.12 (Source Check) and 1.0.AA (Solidification) and the detailed procedural requirements of the Limiting Conditions for Operation, including their associated applicability, remedial actions, surveillance, and reporting requirements, for the specifications listed below from the TS to the ODCM or PCP.

<u>Specification</u>	<u>Title</u>
3/4.2.D	RADIOACTIVE LIQUID EFFLUENTS MONITORING INSTRUMENTATION
3/4.2.K	RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION
3.8.A.1,2,3,4, 4.8.A.1,2,3,4,5	LIQUID EFFLUENTS
3.8.B.1,2,3,4,5,6,7,8 4.8.B.1,2,3,4	AIRBORNE EFFLUENTS
3/4.8.C	RADIOACTIVE EFFLUENTS - DOSE
3/4.8.F	SOLID RADWASTE

In addition; the bases associated with the above listed TS will be deleted and relocated to the ODCM.

The procedural details that will be removed from the TS are not required by the Commission's regulations to be included in the TS. Revisions to the ODCM and PCP have been prepared in accordance with the proposed changes to the Administrative Controls section of the TS regarding the ODCM and PCP, and will be incorporated into the ODCM or PCP when these amendments are issued. As procedural details of the ODCM and PCP, they may be subsequently changed by the licensee without prior NRC approval, in accordance with the controls provided by the proposed amendments to the Administrative Controls section of the TS. Changes to the ODCM and PCP are documented and will be retained for the duration of the operating license in accordance with proposed Specification 6.10.1.r. The amendments proposed in this area are consistent with the guidance provided in Generic Letter 89-01 and are therefore acceptable.

Currently, the Radiological Effluent Manual (REM) contains the site and environmental sampling and analysis programs for measurements of radiation and radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation



exposure to individuals from station operation. It also specifies operating guidelines for radioactive waste treatment systems and report content. Upon issuance of the subject amendments, these programs and guidelines will be incorporated into the ODCM. Therefore, references to the REM in the TS (including Specification 1.0.EE, the definition of REM, the specifications listed above, and Specification 6.13, administrative controls for the REM) will be deleted.

- (c) The licensee has proposed adding a specification in the Administrative Controls section of the TS for the Annual Radiological Environmental Operating Report (Specification 6.9.1.5) and revising existing specifications for both the Process Control Program (Specification 6.11) and the Offsite Dose Calculation Manual (Specification 6.12). These proposed specifications are consistent with model specifications provided in Generic Letter 89-01. An additional TS change was proposed for the Annual Radioactive Effluent Release Report (Specification 6.9.1.8) which is consistent with a specification provided in Generic Letter 89-01, but modified to conform to a change in regulation 10 CFR 50.36a(a)(2) (57 FR 39358, August 31, 1992), that extends the periodicity of reporting radioactive effluent releases to an annual basis.
- (d) The following specifications that are included under the heading of Radioactive Effluents have been retained in the TS.

<u>SPECIFICATION</u>	<u>TITLE</u>
1.0.BB	ODCM
1.0.DD	PROCESS CONTROL PROGRAM
Figs. 4.8-1 a&b	GASEOUS RELEASE POINTS & LAND SITE BOUNDARY
3/4.2.K	EXPLOSIVE GAS MONITORING INSTRUMENTATION (Retained existing requirements of this specification with revised bases) (Refer to section 2.2 below for further detail)
3.8.A.5,6 4.8.A.6	LIQUID HOLDUP TANKS (WITH BASES ADDED)
3.8.B.9,10 4.8.B.5	EXPLOSIVE GAS MIXTURES (WITH BASES ADDED)
3/4.8.D	MECHANICAL VACUUM PUMP
3/4.8.E	MISCELLANEOUS RADIOACTIVE MATERIAL SOURCES

The retention of these specifications is consistent with the guidance provided in Generic Letter 89-01.



The guidance provided in Generic Letter 89-01 calls for the retention of those TS pertaining to explosive monitors for radioactive gaseous effluents. At BFN the corresponding monitors are the hydrogen monitors for the Off-Gas system. In accordance with the generic letter, the licensee proposed to retain specifications 3.2.K.1 and 3.2.K.2 (appropriately revised to delete the instruments associated with the RETS relocation) requiring that (1) the hydrogen monitors be maintained operable (together with prescribed actions to be taken in the event that the number of operable channels is less than the minimum required) and (2) their associated alarm setpoints be appropriately set. The licensee's proposal properly deleted the term "trip" from Specification 3.2.K.1, since the hydrogen monitors do not have a trip function.

- (e) The staff has reviewed the editorial changes identified in Enclosure 2 to the licensee's application supplement dated January 29, 1993. The changes are minor in nature, and, therefore, the staff finds them acceptable.

On the basis of the above, the staff finds that, with the exception of the licensee's proposal (discussed below) to delete Specification 3.2.K.3 regarding the hydrogen monitor alarm setpoint, the changes included in the proposed TS amendment request are consistent with the guidance provided in Generic Letter 89-01 and the requirements of regulation 10 CFR 50.36(a)(2). Since the control of radioactive effluents continues to be limited in accordance with operating procedures that must satisfy the regulatory requirements of 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50, the NRC staff concludes that the proposed TS changes are administrative in nature and there is no resultant impact on plant safety. Accordingly, the staff finds these changes acceptable.

2.2 Deletion of TS 3.2.K.3 (Hydrogen Monitor Alarm Setpoint)

Specifications 3.2.K and 4.2.K (Radioactive Gaseous Effluent Monitoring Instrumentation) currently address instruments which measure both radioactivity and hydrogen (explosive gas) concentrations in plant gaseous effluents and are among the specifications affected by the proposed relocation of the RETS. As noted above, the RETS relocation will reduce the scope of instruments addressed by Specifications 3.2.K and 4.2.K to the two Off-Gas system hydrogen monitors.

The proposed amendments delete one of the action statements (3.2.K.3) required by Specification 3.2.K which, following the RETS relocation, would have prescribed three alternative actions to be taken upon discovery that an alarm setpoint for a hydrogen monitor is less conservative than required by TS. One alternative would have been to declare the affected instrument inoperable. The remaining two alternatives would have been to either suspend the release without delay or to properly adjust the alarm setpoint. The licensee's proposal does not conform to the guidance provided in Generic Letter 89-01. That guidance calls for the retention of a specification requiring declaration of instrument inoperability in the event an alarm setpoint is found to be less conservative than TS.



The basis for the proposed deletion of Specification 3.2.K.3 was provided by the licensee in its August 27, 1993, letter and is predicated upon TVA's interpretation of specification 3.2.K.1, which requires the hydrogen monitors to be operable with the prescribed alarm setpoint, in conjunction with the TS definition of operability (paragraph 1.0.E). TVA considers that the combined effect of paragraphs 3.2.K.1 and 1.0.E is to require that a hydrogen monitor be declared inoperable in the event its alarm setpoint is found to be less conservative than required by TS. Since a declaration of inoperability is one of the alternative actions called for by Specification 3.2.K.3, the licensee considers specification 3.2.K.3 to be redundant and therefore unnecessary.

The staff has reviewed the licensee's proposal to delete Specification 3.2.K.3 and, based upon the following considerations, concurs with the licensee's conclusion that Specification 3.2.K.3 is redundant to existing TS requirements and can therefore be deleted.

- (a) TS 3.2.K.1 requires that the hydrogen monitors be maintained operable. In order for a component to be considered operable, the TS definition of operability (paragraph 1.0.E) requires that it must be capable of performing its required function(s). Since one of the functions of the hydrogen monitors (as described in Section 9.5, Table 9.5-2, of the BFN Updated Final Safety Analysis Report) is the alarm function, an inability of the monitors to properly alarm (such as would result from a non-conservative setpoint) would require those monitors to be declared inoperable.
- (b) Operability of a component is dependent upon the capability of that component to meet its surveillance requirements. More specifically, the definition of surveillance (TS paragraph 1.0.LL) requires that, unless otherwise stated, surveillance requirements for a component shall be met during the conditions specified by the individual limiting conditions for operation. The definition further states that, "Performance of a surveillance requirement within the specified time interval shall constitute compliance and operability requirements for a limiting condition for operation and associated action statements...." The surveillance requirements for the hydrogen monitors consist of channel functional tests (as defined by TS paragraph 1.0.12) on a quarterly basis and channel calibrations (as defined by TS paragraph 1.0.11) on a once-per-refueling interval basis. Both of these surveillance activities verify the operability of the alarm function. Given the above, any determination that a hydrogen monitor alarm setpoint is less conservative than that required by TS (when that monitor is required to be in service) would render the monitor incapable of passing its surveillance test which would, in turn, require that the monitor be declared inoperable.
- (c) The requirements discussed in paragraphs 2.2(a) and (b) will continue to ensure an appropriate licensee response to deficiencies in the hydrogen monitors. Similarly TS 3.8.B.9 and 3.8.B.10, which are not affected by these amendments, ensure appropriate licensee response to unacceptably high concentrations of hydrogen in the Off-Gas system. These specifications limit the concentration of hydrogen in the system to 4%



or less by volume and require corrective action in the event this limit is exceeded. A failure to satisfy the requirements of Specifications 3.8.B.9 and 3.8.B.10 would require a plant shutdown in accordance with TS paragraph 1.0.C.1 (Limiting Conditions for Operations).

On the basis that the TS require that (1) the hydrogen monitors be declared inoperable in the event their associated alarm setpoint is found to be non-conservative, (2) such action is identical to one of the alternative actions currently required by Specification 3.2.K.3 to address a non-conservative setpoint, and (3) Specifications 3.8.B.9 and 3.8.B.10 will continue to limit the concentration of hydrogen in the Off-Gas system, the staff finds the licensee's proposal to delete Specification 3.2.K.3 acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Alabama State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change the surveillance requirements. 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 (57 FR 22268 on May 27, 1992 and 57 FR 36447 on July 7, 1993). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). 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.

5.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

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