



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 77 TO FACILITY OPERATING LICENSE NO. DPR-34  
PUBLIC SERVICE COMPANY OF COLORADO  
FORT ST. VRAIN NUCLEAR GENERATING STATION  
DOCKET NO. 50-267

## 1.0 INTRODUCTION

Fort St. Vrain (FSV) was permanently shutdown on August 18, 1989. By letter dated September 14, 1989 as revised October 13, October 30 and December 4, 1989 Public Service Company of Colorado (the licensee) submitted proposed Technical Specifications (TS) for Reactivity Control during defueling. The proposed TS were submitted in response to a letter from the NRC dated August 8, 1989 requesting that the licensee upgrade these TS. These TS upgrade the present reactivity control TS and have been extensively reviewed by the NRC staff and contractors, Idaho National Engineering Laboratory (INEL) and Oak Ridge National Laboratory (ORNL). These contractors combined their review of the TS upgrade program in a Technical Evaluation Report (TER) released by NRC letter dated April 19, 1989. This safety evaluation by the NRC staff evaluates the proposed TS with respect to the current TS for FSV. The revisions of October 13 and 30 and December 4, 1989 were made to provide TS continuity, to correct page number discrepancies and to delete a portion of the September 14, 1989 request. These changes do not change the staff's previous determination of no significant hazards consideration.

## 2.0 EVALUATION

The individual sections of the proposed TS are discussed and evaluated. As shown in the detailed evaluation, the proposed TS upgrade the current TS with more conservative requirements.

### 2.1 Editorial Changes To Definitions

The licensee proposed changes to the current definitions and added new definitions for clarification.

New definitions were added to current TS to be consistent with FSV defueling requirements. TS definitions were proposed to be added to the definitions section of current TS for Calculated Bulk Core Temperature, Core Average Inlet Temperature, Action, Core Alteration, Core Average Temperature, Power to Flow Ratio, Primary Coolant Flow, Shutdown Margin and Thermal Power. In addition a definition for Operational Mode was added to the new proposed section on "Reactivity Control."

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All of the proposed changes to Definitions are administrative changes to clarify TS requirements. None of the changes result in any decrease in TS requirements. The NRC staff has reviewed each of the above changes and additions to Definitions and has determined that they are acceptable.

## 2.2 Replacement of Current TS on Reactivity Control TS 4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.1.6, 5.1.1, 5.1.2, 5.1.3 and 5.1.5

With the addition of a new section on Reactivity Control, the licensee proposes to delete certain TS requirements in current TS and move them into the new Reactivity Control section. In addition, some changes in Reference Notes in current TS were proposed to be rewritten to be consistent with the new Reactivity Control section.

The licensee proposed the deletion of certain Limiting Conditions for Operation (LCO's) in current TS on Reactor Core and Reactivity Control because these TS will be superseded by TS in the new Reactivity Control section. Current LCO's on Operable Control Rods, Rod Sequence, partially Inserted Rods, Reactivity Change with Temperature and Reserve Shutdown System are proposed to be deleted and the requirements moved to the new section.

Similarly, the licensee proposes to delete certain Surveillance Requirements in current TS on Reactor Core and Reactivity Control because they will be superseded by Surveillance Requirements in the new Reactivity Control Section. Current TS Surveillance Requirements on Control Rod Drives, Reserve Shutdown System, Temperature Coefficients and withdrawn Rod Reactivity are proposed to be deleted and the requirements moved to the new section.

The staff has reviewed each of the proposed deletions of LCO's and Surveillance Requirements and has determined that they are replaced by equal or more conservative TS and Surveillance Requirements in the new proposed Reactivity Control section. Therefore, the staff finds these deletions acceptable.

## 2.3 Nuclear Facility Safety Committee Administrative Controls AC 7.1.3

The proposed TS lists specific issues which require approval by the Nuclear Facility Safety Committee. The staff's review has determined that the change clarifies the responsibilities of this committee and is more conservative than current TS.

## 2.4 Reactivity Control Section

The proposed TS adds a new section (3/4) to the current TS to upgrade requirements for Reactivity Control and to be more consistent with TS used for other nuclear power plants. Appropriate parts of sections 4 and 5 of the current TS are deleted as discussed above.

### ° Applicability 3.0/4.0

The applicability TS in the Reactivity Control section are consistent with existing standard TS (STS) with the exception of FSV site specific differences. These site specific differences relate to reactor startup,

low power and power operations and not to the shutdown/refueling modes that now apply to FSV in its permanent shutdown status. The staff has reviewed the proposed applicability TS, section 3.0/4.0 and has determined that it is acceptable.

◦ Control Rod Pair Operability and Control Rod Pair Position Indicating Systems - Operating, 3/4.1.1 and 2

These proposed TS changes are applicable to startup, low power and power operations. They do not apply to the permanent shutdown status of FSV with the exception that these TS prohibit any reactor operations following the removal of the first set of control rods in preparation for removal of the first fuel region. The staff has reviewed these changes and found them acceptable.

◦ Control Rod Pair Position Indicating Systems - Shutdown, 3/4.1.3

These proposed TS are more consistent with industry wide practice than the current FSV TS and are consistent with the licensee's proposal to replace the spent fuel with unfueled boronated dummy fuel blocks as each region is defueled. Since the dummy fuel blocks contain sufficient boron to maintain shutdown margin no channels are provided for the insertion of control rods. The control rods will be stored in the fully withdrawn position and position indication is not applicable. Based on its review, the staff finds this proposed TS acceptable.

◦ Shutdown Margin, 3/4.1.4

The licensee has incorporated additional requirements that are more conservative and are consistent with proposed defueling operations. The proposed TS requires the suspension of all control rod pair withdrawals and fuel manipulations if shutdown margin is less than 0.01 delta k. The staff has reviewed the proposed TS and finds them acceptable.

◦ Control Rod Pair Position and Worth Requirements-Operating, 3/4.1.5

The proposed TS are applicable only to power, low power and startup operations. Since FSV is permanently shutdown, this TS is no longer necessary but, we have reviewed the proposed TS and find it acceptable.

◦ Control Rod Pair Position Requirements-Shutdown, 3/4.1.6

The proposed TS is a more conservative requirement to be added to the current TS. The proposed TS require that, during shutdown and refueling/defueling only two control rod pairs may be removed from fueled regions except for the additional control rod pairs withdrawn for shutdown margin assessment or operability tests. The staff has reviewed these proposed TS and found that they are acceptable.

◦ Reactivity Change with Temperature, 3/4.1.7

The proposed TS requires reactor shutdown if the negative temperature coefficient of the core does not fall between specific limits during power,

low power or startup operations. Since FSV is permanently shutdown, this TS is no longer necessary but, we have reviewed the proposed TS and find it acceptable.

° Reserve Shutdown System (RSD)-Operating, 3/4.1.8

This TS requires reactor shutdown if RSD operability conditions are not met. This TS is a more conservative requirement that is applicable to power, low power and startup operations. Since FSV is permanently shutdown, this TS is no longer necessary but, we have reviewed the proposed TS and find it acceptable.

° Reserve Shutdown System-Shutdown 3/4.1.9

This TS requires the RSD to be operable in all control rod drive assemblies for which control rods can be withdrawn. It also specifies action requirements if RSD is not operable. This is a more conservative requirement than current TS. Based on the staff's review, this proposed change is acceptable.

3.0 SUMMARY

The staff has reviewed the licensee's proposed TS for Reactivity Control dated September 14, 1989 as revised October 13, October 30 and December 4, 1989, and finds them acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves 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 exposures. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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 amendment.

5.0 CONCLUSION

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and 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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Dated: January 24, 1990