

SAFETY EVALUATION REPORT
FT. ST. VRAIN NUCLEAR POWER PLANT
LICENSEE RESPONSE TO I&E BULLETIN 80-06,
ENGINEERED SAFETY FEATURES (ESF) RESET CONTROLS

INTRODUCTION

Instances have been reported at operating nuclear power plants where it has been found that following the reset of an ESF actuated signal certain equipment, e.g., ventilation dampers, motors, and valves, would return to the normal mode, which could compromise the protective actions of the affected systems. As a result, on March 13, 1980, the NRC issued I&E Bulletin 80-06 requesting certain actions to be taken by licensees for all PWR and BWR facilities with operating licenses.

BACKGROUND:

By letter dated March 27, 1980, Public Service Company (PSC) of Colorado informed NRC that PSC concluded that I&E Bulletin 80-06 did not apply to Ft. St. Vrain, (FSV) a high temperature gas cooled reactor (HTGR) since the bulletin specifically noted actions to be taken by licensees of PWR and BWR facilities. Since the concerns addressed in the bulletin were generic and involved considerations of safety system circuits, PSC was requested by NRC in September 1981 to provide response to the bulletin. By letter dated October 30, 1981 PSC indicated that a review of the steam water dump system would be conducted in accordance to the bulletin. This system is the only system which the FSV FSAR defines as an Engineered Safety Feature System and involves safety circuits for system initiation.

Subsequently in March, 1982 the staff requested PSC to include those actions initiated by the plant protection system to assure that safety-related equipment remains in the emergency mode on reset of the protection system. This request was made since the plant protection system performs safety functions for which the FSV FSAR takes credit in safety analysis of the plant.

EVALUATION:

By letter dated January 15, 1982, PSC provided the results of their review of the steam water dump system drawings, at the schematic diagram level, in accordance to Licensee Action 1 of the bulletin. The operation of the solid state protection was described wherein a control relay driver (XCR) is the final control device which is used to initiate a safety action. The XCR energizes a control relay, the contacts of which are used in the final device control circuit. Once an XCR is actuated by the protection system logic, it remains in this state, regardless of the state of actuation input signal, until it is reset. The reset of the XCR's is performed automatically by the use of contacts from manual control switches for the devices performing the safety action. In the cases where an analog signal is used to control a device performing a safety function, a bistable monitors the analog signal to determine its state. These control switches or bistable contacts permit the reset of the XCR only when manual controls are in position such that the device will not change state when the XCR is reset.

By letter dated March 11, 1982, PSC provided the results of tests which verified that components of the steam water dump system will not change state on a reset of the actuation signal.

By letter dated May 28, 1982, PSC confirmed that a review was completed for the reset circuits associated with the plant protection system and that no problems were found. In that the major concerns involved with the reset of safety system circuit were a result of plant designs involving manual reset actions, and the design of the FSV protection system utilizes an automatic means to assure that control devices are placed in a safety state before a reset of the safety system can occur, we conclude that review of these circuits without the performance of additional testing provide adequate assurance to resolve this concern. Further we conclude that the review and tests performed for the steam water dump system fulfilled the objective of action items 1 & 2 of the bulletin. Since no problems were revealed in either the reviews or tests conducted, action item 3 of the bulletin is not applicable. The referenced correspondence fulfills the requirement of action item 4 of the bulletin. Therefore we find that the licensee has provided adequate evidence that reset controls conform to NRC criteria.