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BILLY R. CLEMENTS
VICE PRESIDENT, NUCLEAR OPERATIONS

December 4, 1984
TXX #4373

Mr. Richard C. DeYoung, Director
USNRC Office of Inspection and
Enforcement
Washington, D.C. 20555

Dear Mr. Young:

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
DOCKET NOs. 50-445 and 50-446
RESPONSE TO IE BULLETIN 84-03

The following information is given in response to I` Bulletin 84-03, "Refueling Cavity Water Seal". Our response is based on Section No. 2's Action request that an evaluation be performed to determine the potential for and consequences of a refueling cavity water seal failure.

Our review indicated that a gross seal failure as described in the Bulletin is highly unlikely to occur at CPSES. For additional safety, the reactor cavity will be visually checked for seal leakage after filling the refueling cavity.

Action Item

The item reads:

Action to be Taken by Plants Prior to Beginning Refueling or Within 90 Days of Receipt of This Bulletin, Whichever is Sooner:

2. Evaluate the potential for and consequences of a refueling cavity water seal failure and provide a summary report of these actions.

Response:

The Comanche Peak refueling cavity water seal design (Attachment 1) is much different from that of the Haddam Neck plant. The Comanche Peak design consists of two permanently welded components. One component is a horizontally installed stainless steel ring. The horizontal ring is welded at one end to

IE11
1/1

the cavity liner and welded at the other end to the bottom of the second component. The second component is a vertically installed stainless steel ring. The vertical ring is welded at the top to the reactor vessel seal ledge. The result of this design is a permanently installed seal, welded to both the cavity liner and the reactor vessel seal ledge. This design does not utilize any active components. Due to the design described above, it is not expected that the Comanche Peak seal will fail in the manner of the Haddam Neck seal but would exhibit leak before break characteristics.

For analysis purposes, it was assumed that the seal developed a leak equivalent to a one-inch diameter hole. This would result in a leak rate of approximately 100 gpm corresponding to a maximum change in refueling water level of one-tenth inch per minute. At this rate, the refueling cavity would drain in approximately 48 hours. The leak would be detected long before any fuel uncovery could occur. The principle means of detection would be from the reactor cavity sump level high alarm (located in the Control Room) or the refueling cavity level low alarm. (This alarm is located at the spent fuel pool panel, but would result in the refueling cavity system trouble alarm in the Control Room.) The alarm procedures associated with these alarms will be revised before the first refueling outage to explicitly address the possibility of a refueling cavity seal leak. Upon verification of a leak, the operator will be instructed by these procedures to isolate the spent fuel transfer tube by closing the remotely operated manual gate valve and place fuel in transit in a safe location. Should it be necessary to make-up water, borated water is available from the Refueling Water Storage Tank (RWST) or the boric acid storage tank to the Reactor Coolant System (RCS). Additional make-up to the spent fuel pool is available from the demineralized water storage tank or the reactor make-up water storage tank.

In addition to revising the alarm procedures discussed above, procedure RFO-102, "Refueling Operation", will be revised before the first refueling outage to require a check of the reactor cavity for seal leakage after filling the refueling cavity. This check will identify any significant leakage prior to fuel movement.

In summary, a gross seal failure as described by IEB 84-03 is highly unlikely to occur at CPSES. The CPSES refueling cavity water seal is a permanently installed stainless steel ring, welded to the cavity liner on one side and welded to the reactor vessel seal ledge on the other side. This type of seal is expected to leak before break. Sufficient alarms and visual checks are provided to detect significant leakage and initiate mitigating actions long before fuel cladding damage could occur. Applicable alarm procedures will be revised to explicitly address the possibility of a seal leak during refueling. In addition, the reactor cavity will be visually checked for seal leakage after filling the refueling cavity.

Should you have additional questions concerning this matter, please contact the office of the Vice President, Nuclear Operations.

Sincerely,

Billy R Clements

BRC:kh

Attachment

original to: U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

ATTACHMENT 1

COMANCHE PEAK SEAL RING