Enclosure to Serial: RNP-RA/95-0156

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	DOCKET NUMBER (2) 050-261	PAGE (3) 1 of 4

TITLE (4) TS 3.0 ENTRY DUE TO EXCESSIVE PENETRATION PRESSURIZATION SYSTEM LEAKAGE

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
07	21	95	95	--005--	00	08	21	95	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)	X	OTHER
	20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		Voluntary
	20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		
	20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
A. L. Garrou: Acting Manager - Licensing/Regulatory Programs	(803) 857-1544

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
A	PEN	BLL	P090	N						

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

This is a voluntary Licensee Event Report. On July 20, 1995, H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, was operating at 100% reactor power. At 1902 hours, Plant operators received a "C" Penetration Pressurization System (PPS) header low pressure alarm. At 1902 hours, Technical Specification (TS) Section 3.0 was entered, which requires that the plant be placed in hot shutdown within 8 hours and in cold shutdown within the next 30 hours, based on the potential for a breach of containment integrity. On July 21, 1995, the NRC exercised discretionary enforcement, allowing an additional period of 12 hours beyond the TS Section 3.0 Allowed Outage Time to confirm containment integrity. At 0306 hours on July 21, 1995, the plant staff confirmed by testing that containment integrity existed throughout the event, and therefore TS Section 3.0 was not in fact entered. This event was caused by personnel error. A penetration bellows failure occurred during 1987 due to Transgranular Stress Corrosion Cracking (TGSCC), and recommendations were made to consider future replacement with materials resistant to TGSCC. However, a 1990 replacement did not consider using these materials, resulting in the July 20 failure. This event had no adverse impact on plant safety. The source of leakage from the penetration was confirmed to be from the penetration surface on the outside of the containment, and containment integritywas maintained. The penetration was repaired on July 31, 1995, and will be replaced during the next refueling outage. Additional penetrations will be inspected to determine if evidence exists of TGSCC occurring.

9508280382 950821
PDR ADOCK 05000261
S PDR

NRC FORM 366A (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL	REVISION	
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	050-261	95	005	00	2 of 4

I. DESCRIPTION OF EVENT

On July 20, 1995, H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, was operating at 100% reactor power. At 1902 hours, Plant operators received a "C" Penetration Pressurization System (PPS) (EIIS System Code: BD) header low pressure alarm. The combined leakage from the PPS exceeded the limit allowed by Technical Specifications as delineated in procedure Operations Management Manual (OMM)-008, "Minimum Equipment List" as 1.57 scfm to meet containment integrity (i.e., 30 percent of L_p). Service water had been isolated to penetration coolers earlier to aid in an investigative maintenance activity. Operators re-established service water to the "C" Steam Generator (SG) blowdown line penetration (i.e., penetration number S-24) (EIIS Code: PEN) service water coolers (EIIS Code: CLR) and isolated PPS from the penetration. At 2040 hours, the combined PPS leakage rate was observed to be within the allowed limits, confirming the location of the leakage to be in the S-24 penetration. At 2055 hours, Technical Specification (TS) Section 3.0 was entered, retroactive to 1902 hours, which requires that the plant be placed in hot shutdown within 8 hours and in cold shutdown within the next 30 hours, based on the potential for not satisfying the TS requirements for containment integrity.

The SG blowdown penetrations are constructed with a sleeve welded to the steel liner on the inside of containment, with a single expansion bellows (EIIS Code: BLL) located on the penetration piping on the outside of the containment. The blowdown piping is constructed of carbon steel, and the penetration bellows is Type 321 stainless steel. A penetration cooler supplied by service water surrounds the insulated SG blowdown piping on the inside of the penetration. When service water was isolated from the penetration bellows, the SG blowdown flow created a temperature rise in penetration S-24, which initiated a leak in the penetration. However, a positive determination of the location of the leakage could not be made until the penetration had cooled sufficiently to allow inspection. On July 21, 1995, the NRC was requested to exercise discretionary enforcement to allow an additional period of 12 hours beyond the TS Section 3.0 Allowed Outage Time (AOT) to confirm containment integrity. Enforcement discretion was verbally granted by the NRC at 0230 hours on July 21, and documented by NRC letter dated July 24, 1995.

At 0306 hours on July 21, 1995, the plant staff confirmed that the penetration leakage was from a section of the penetration bellows located on the outside of the containment, and that containment integrity and therefore compliance with TS requirements was confirmed. Accordingly, TS Section 3.0 was not entered.

NRC FORM 366A (3-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL	REVISION	
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	050-261	95	005	00	3 of 4

II. CAUSE OF EVENT

This event was caused by personnel error in that corrective actions taken in response to previous similar events were inadequate. During the 1984 SG replacement outage, the three SG blowdown lines (i.e., penetration numbers S-24, S-26, and S-30) were replaced with larger diameter blowdown lines to accommodate a higher blowdown rate for the new SGs, and the insulation was replaced with insulation sized to fit the larger diameter pipe. No record existed of the original pipe insulation material composition, and no documented material evaluation was performed for the new insulation prior to installation. In 1986, a penetration bellows failure occurred in SG blowdown line penetration S-24. The bellows was subsequently replaced during 1987, and following an analysis of the defective bellows, the failure mechanism was determined to be Transgranular Stress Corrosion Cracking (TGSCC). At that time, recommendations were made to consider future replacement with materials resistant to TGSCC. During 1989, leaks were again detected in the penetrations bellows for all three penetrations, and repairs were scheduled for 1990. During these repairs, an undetermined quantity of water was discovered inside the S-30 penetration, and a chloride free insulation was installed on the piping in penetration S-30. However, the replacement did not consider using TGSCC resistant materials for the other two penetrations.

On July 21, 1995, inspection of the penetration S-24 bellows revealed a crack approximately one to two inches in length, and further analysis revealed the presence of chlorides inside the penetration. Our evaluation concluded that condensation of water from the PPS supplied air inside the penetration wetted the pipe insulation, and transported the chlorides contained in the insulation material to the penetration bellows. The presence of these chlorides on the stainless steel material of the penetration bellows caused the bellows to fail due to TGSCC. The source of the moisture in the PPS is the Instrument Air System, which uses refrigerated dryers that is only capable of reducing the dew point of the supplied air to 40 degrees F.

III. ANALYSIS OF EVENT

This event had no adverse impact on plant safety. The integrity of the portion of the penetration inside the containment was confirmed utilizing a non-qualified testing method as described in our letter requesting enforcement discretion dated July 21, 1995. Because the source of leakage from the penetration was confirmed to be from the penetration surface on the outside of the containment, the required leakage rate for containment was maintained.

The PPS pressurizes certain containment penetrations with air at a slightly higher pressure than the peak containment accident pressure. No credit is taken for the operation of this system for accident mitigation in the Updated Final Safety Analysis Report (UFSAR) accident analysis, and therefore no Limiting Conditions for Operation (LCO) associated with this system were delineated in the TS.

NRC FORM 366A (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL	REVISION	
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	050-261	95	005	00	4 of 4

III. ANALYSIS OF EVENT (Continued)

TS Section 1.7.e, "Containment Integrity," requires that the uncontrolled containment leakage satisfies TS Section 4.4, "Containment Tests." TS Section 4.4.1.2.b, "Sensitive or Local Leak Rate Test," requires that repairs and retest shall be performed whenever the combined leakage rate of the sensitive leak rate test exceeds 30 percent of L_p. If uncontrolled containment leakage is in excess of the required limit (i.e., 1.57 scfm) required by TS Section 4.4.1.2.b, then containment integrity can not be satisfied and the requirements of TS Section 3.0 are applicable. Confirmation that containment integrity existed during this event demonstrated that no condition (i.e., uncontrolled containment leakage) prohibited by TS existed; therefore, TS Seciton 3.0 was not entered and no condition reportable pursuant to 10 CFR 50.73 existed. However, this report is being submitted voluntarily.

IV. CORRECTIVE ACTIONS

Penetration S-24 bellows assembly was replaced by July 31, 1995.

Containment penetrations S-24 and S-26 will be replaced during Refueling Outage 17, scheduled to start during September 1996. Penetration S-30 will be inspected during Refueling Outage 17 to determine if there is evidence that TGSCC is occurring.

A Preventative Maintenance (PM) activity will be established to remove water in the PPS supply air accumulator to limit moisture carryover to the containment penetrations.

V. ADDITIONAL INFORMATION

A. Failed Components

None

B. Previous Similar Events

None