NRC FORM 366

U S NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT EXHIBIT A CONTROL BLOCK IPLEASE PRINT OR TYPE ALL REQUIRED INFORMATIONI $\left(\cdot \right)$ ANO 10 101010 1110 THO: 10 0051 011 100 80 017 2 14 17 19 10 18 11 4 17 10 10.021 As a result of investigation of baseplate flexibility per IE Bulletin 1 79-02, seven restraints have been identified as having a safety factor of <2. The hangers are: 2 GCB-5-H24, LPSI Suction; 2 HBC-35-H1, Service</p> Water Loop 1; 2 HCB-2-H4, A&C Charging pump suction header; 2 HCB-34-H7, Service Water Loop 2; 2 HCB-13-H7, Bldg. Spray Loop 2; 2 HCB-241-H6, Penetration room ventilation; 2 Fcc-1-H17, Par relief. No similar Reportable per T.S.6.9.1.9(b). occurrences. IPI0 1.1.4 CIM LSIU IR 0 0 10,0 0 N NO CORRECTIVE ACTIONS (7) The systems involved, and related Tech Specs are: Pressurizer Relief, T.S. 3.4.2; Service Water, T.S.3.7.3.1; Building Spray, T.S.3.6.2.1; Low Pressure Safety Injection, T.S.3.5.2; Charging System, T.S. 3.1.2.4 Requirements of applicable Action Statements were met. See also, Attachment (h Power Escal IE Bulletin'79-02 0150 lesting 100 1 100 DF HE. ERIC (36) NA NA NA (11) 1.04(41) NA 010 (40) DESCRIPTION 1144 (45) NAVE LAST TALLY LILIIIII Chris N. Shively 501/968-2519 VANE OF PREPARED _ 8-101.8 7908200 308

ATTACHMENT A

Previous Method of obtaining bolt loads (CSF = 1.94)

The forces and moments are transmitted by the pipe to the slab through the 1" plate (Item 10) to the 6" angles (Items 2, 3, 4) and the $\frac{1}{2}$ " plate (Item 6) and to the bolts. The loads and moments are transferred to the bolts through the weld connection item 10 to items 2, 3, 4, 6.

Per this method, the loads on the weld connecting item 10 to items 2, 3, 4, 6 are determined by calculating the weld force/unit length along the outer edges of item 10. The loads are transmitted along the edge in pullout and shear per unit length. The bolt loads are determined based upon a contributary length approach; i.e. it is assumed that any bolt takes half the force on total length between adjacent bolts.

Revised Method of obtaining bolt loads (CSF = 2.2 min)

In the revised method, the force on the weld connecting item 10 to 2, 3, 4, 6 are determined in the same way. However, the total force in pullout and shear is distributed evenly between the bolts depending on whether they are loaded in shear or pullout.

This is based upon the fact that:

- 1 The size of the item 10 is small (23" x 20") and it is welded all around making the uniform load distribution assumption reasonable.
- 21 The support structure (in conjunction with the pipe welded to it) becomes fairly rigid and the load is assumed to be uniformly transferred.

This approach would probably give a more reasonable approximation to the bolt loads.



Reportable Occurrence 50-368/79-058

ATTACHMENT B

RESTRAINT	LOCATION	CURRENT SAFETY	
	LOCATION	FACTOR	CUDIENT
2GCB-5-H2	Reactor Aux, Bldg.		Madification Complete 7/2//20
			noutreacton comprete 1/24/19
	Reactor		
2HCB-35-H1	Aux. Bldg.	> 2	Modification Complete 7/24/79
			and the supress of the second
	Reactor		
2HCB-2-H4	Aux. Bldg.	> 2	Modification Complete 7/24/79
		이 것은 것은 소설가 안 좋아요. 귀	
	Reactor		
2HCB-34-11/	Aux. Bldg.	< 2	Modification Complete 7/25/79
	Baseter		
2000-12-07	Reactor		
2000-13-07	Aux. Bidg.	< 2	Modification Complete 7/25/79
	Reactor		
2HCB-241-H6	Aux Bldg	12	
	nux. brug.	~2	Not Tech Spec ed. Modifica-
	Reactor		cron comprete //25/19.
2FCC-1-H17	Bldg	>2	Modification alassed at and
	stug.		outage.

Reportable Occurrence 50-368/79-058

As a result of investigations into baseplate flexibility required by IE Bulletin 79-02, we have identified seven (7) restraints which have a safety factor of less than 2. AP&L reviewed these seven to determine the possible affect on plant operation. ANO-2 is presently at 50% power performing Power Escalation Testing. On July 23, we identified that portions of redundant systems were involved. Action was taken on July 23 to upgrade all restraints on one train of the plant systems to a safety factor of greater than 2. This was accomplished by 8 A.M. on July 24. At 1500 on July 24, we were informed by our Resident Inspector, Bob Spangler, that the NRC considered all systems which contained baseplates with a safety factor less than 2, as inoperable. Our review of the remaining four hangers identified one restraint which fell into a 12 hour action statement and two restraints which fell into a 72 hour action statement. The remaining hanger is on a system not covered by Technical Specifications.

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A re-analysis was performed on the one hanger falling in the 12 hour requirement. This re-analysis resulted in a safety factor greater than 2. This reanalysis was performed in accordance with the method of calculation described in Attachment A. This restraint is located inside the reactor building and is not normally accessible.

Revised designs have been prepared for all of the restraints and installation is complete, except for the one inside the reactor building.

The restraint modification in the reactor building will be implemented at the next plant outage. AP&L will prepare the design and assemble all of the required material in preparation for this outage should an unplanned reactor trip occur.

A listing of the seven restraints involved and the planned corrective action is presented in Attachment B.

No restraints with a safety factor of less than 1 have been identified.