NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

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EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Point Beach Nuclear Plant, Unit 1	05000266	1 OF 5

TITLE (4)

Safety Injection Accumulators Isolated During Plant Startup Procedure In Violation of Technical Specifications

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
									PBNP Unit 2	05000301
06	05	97	97	-- 029 --	00	07	07	97	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10)	000		20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)		
			20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)		
			20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71		
			20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER		
			20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A		
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)				

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
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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

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 23, 1997, with Unit 1 in cold shutdown and Unit 2 in a defueled condition, a licensed operator discovered that an operating procedure allowed the isolation of Safety Injection (SI) accumulators during plant startup when primary pressure exceeded 1000 psig. This condition was in apparent violation of Technical Specification (TS) 15.3.3.A.1.h. On June 5, 1997, subsequent reviews confirmed that the procedure violated the Technical Specification and was reportable. The condition was first discovered during research for a major revision to Operating Procedure OP-1A, "Cold Shutdown to Low Power Operation". The failure to recognize the TS Limiting Condition of Operation (LCO) for the RCS leak test was the result of a non-conservative TS interpretation. The LCO was added in 1975 (TS Amendment 14), and at that time the plant startup procedures were not modified to accommodate the new requirement. Prior to the startup of either unit from their present outages, OP-1A will be revised to ensure that the SI accumulators are operable as required by TS 15.3.3.A.1.h.

Event Description:

On April 23, 1997, with Unit 1 in cold shutdown and Unit 2 in a defueled condition, a licensed operator discovered that an operating procedure allowed the isolation of Safety Injection (SI) accumulators during plant startup, in apparent violation of Technical Specifications (TS). On June 5, 1997, subsequent reviews by system engineers and licensing engineers confirmed that the procedure was in violation of Technical Specifications and was reportable per 10 CFR 50.73.

The condition was first discovered during research for a major revision to Operating Procedure OP-1A, "Cold Shutdown to Low Power Operation". The reviewer noted that OP-1A directs the closure of SI accumulator isolation valves SI-841A and SI-841B during the Reactor Coolant System (RCS) leak test, when primary pressure is in excess of 1000 psig. Contrary to the procedure, TS 15.3.3.A.1.h states: "During conditions of operation with reactor coolant system pressure in excess of 1,000 psig, the source of AC power shall be removed from the accumulator isolation valves MOV-841A and B at the motor control center and the valves shall be open." This TS, however, is located in a list of conditions that must be met before the reactor is made critical. On April 23, 1997, a condition report was created to document the apparent TS violation and evaluate the reportability of the condition.

Subsequent review of the apparent Technical Specification violation centered on the conditions of the test and the duration of the RCS leak test. The test is not required for every startup, but only for those outages that affected the reactor coolant system pressure boundary. The test is conducted prior to making the reactor critical, so in a literal sense, TS 15.3.3.A.1.h is not in effect. However, it was concluded that it was more conservative and appropriate to interpret TS 15.3.3.A.1.h as a stand-alone requirement that is in effect irrespective of reactor criticality. In support of this position, the Technical Specification Bases explain that it is conservative to require most engineered safety system components and auxiliary cooling systems to be operable during a plant startup because the energy stored in the reactor coolant system during the approach to criticality is substantially equal to that during power operation. Therefore, the conditions of the RCS leak test were found to be in direct violation of TS 15.3.3.A.1.h, and the reportability was so resolved on June 5, 1997.

System and Component Description:

Each Point Beach nuclear unit is a 2-loop reactor coolant system. A safety injection accumulator is designated to each loop. Each accumulator is

pressurized to at least 700 psig so that it will discharge its boric acid contents to the associated loop during a loss of coolant accident (LOCA). Each accumulator is provided a normally-open discharge motor operated valve (MOV), designated SI-841A and SI-841B. During normal power operation, the power to these MOVs is removed to prevent spurious closure during a design basis event. Each accumulator is isolated from the higher-pressure RCS by two check valves located in series.

Should the RCS pressure fall below the accumulator pressure, the check valves open and borated water is forced into the RCS. Mechanical operation of the swing-disc check valves is the only action required to open the injection path from the accumulators to the core via the cold leg.

The design capacity of the accumulators is based on the assumption that flow from one of the accumulators spills onto the containment floor through the ruptured loop, and the flow from the remaining accumulator provides sufficient water to fill the volume outside of the core barrel below the nozzles, the bottom plenum, and one-half the core.

During a plant startup, the SI accumulator isolation valves are aligned in the open position with the exception of the brief period of the RCS leakage test. Operations Checklist CL-7B ensures that the accumulator discharge isolation MOVs SI-841A and B are shut prior to leaving cold shutdown conditions. Operating Procedure OP-1A, "Cold Shutdown to Low Power Operation" (Step 4.11, "Normal Leak Test") raises RCS pressure to 2085 psig to conduct the RCS leak test (Step 4.11.4). Following the leak test, RCS pressure is reduced to 350-400 psig (Step 4.11.14.d). During subsequent heatup and pressurization, the SI accumulator discharge valves SI-841A and B are opened when RCS pressure is greater than 1000 psig (Step 4.14.6.b). Reactor criticality is achieved later in the startup procedure.

Cause:

The failure to recognize the TS Limiting Condition of Operation (LCO) for the RCS leak test was a non-conservative interpretation of the TS, and a lack of a questioning attitude. The LCO was added in 1975 (TS Amendment 14), and at that time the plant startup procedures were not modified to accommodate the new requirement. Until the present, the procedure reviews conducted since 1975 have failed to identify the discrepancy between the procedure and the Technical Specifications.

Corrective Actions:

1. *Prior to the startup of either unit from their present outages, Operating Procedure OP-1A will be revised to ensure that the SI accumulators are operable as required by the Technical Specification TS 5.3.3.A.1.h.*

2. *We will determine if a clarification to TS 15.3.3.A.1.h is necessary and will submit a Technical Specification change request, if required.*

Reportability:

This Licensee Event Report is being submitted in accordance with the requirements of 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications."

Safety Assessment:

Procedurally, the accumulators were being isolated (in violation of the TS) only during the RCS leak test. This test is not conducted during every plant startup, but only following those outages that affect reactor coolant system pressure boundary integrity. During the test, the RCS temperature could be as high as 410°F and the pressure as high as 2085 psig. The reactor is shutdown during this period. The normal duration of the RCS leak test is approximately four hours.

The unavailability of SI accumulators during this period did not impose a significant radiological risk. The probability of a LOCA occurring during this period is limited by the short duration of the test. Also, if a LOCA were to occur during these plant conditions, the effects would be much less than those of a LOCA initiated at power. The blowdown of the reactor core would be much less severe than the design basis event, and the demand for immediate injection from the SI accumulators would be reduced significantly, if not eliminated. Procedurally, the SI pumps must be available for the test; however, they are not aligned for automatic operation during the test.

Therefore, the isolation of the accumulators during the limited period of the RCS leak test did not impose a risk to the health and safety of the public.

Similar Occurrences:

The following reports also identify recent examples where operating or test procedures violated Technical Specifications:

LER	Description
266/97-019-00	Residual Heat Removal Not Aligned In Accordance With Technical Specifications Operability Requirements
266/97-017-00	Containment Hatch Temporary Third Door Blocked Open During Refueling Operations
266/97-016-00	Steam Generator Level Logic Not Tested In Accordance With Technical Specifications
266/97-012-00	Diesel-Driven Fire Pump Day Tank Not Sampled In Accordance With Technical Specifications
266/97-005-00	1SI-852A Not Tested In Accordance With Technical Specifications
266/97-003-00	Spare Containment Penetrations Not Leak Tested In Accordance With Technical Specifications

System and Component Identifiers

The Energy Industry Identification System component function identifier for each component or system referred to in this Licensee Event Report are as follows:

Component	Identifier	System	Identifier
Pump	P	Reactor Coolant	AB
Valve, Isolation	ISV	Safety Injection	BQ
Accumulator	ACC		