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Vice President-Power Production

LPL 14110
Q-3-A20.03.14

June 9, 1980

Mr. K. V. Seyfrit, Director
U. S. Nuclear Regulatory Commission, Region IV
611 Ryan Plaza, Suite 1000
Arlington, Texas 76012

SUBJECT: I. E. Bulletin No. 80-05 Docket No. 50/382
"Vacuum Condition Resulting In Damage to Chemical
Volume Control System (CVCS) Holdup Tanks"

ATTACHMENT: Review of Waterford 3 Code Tanks for Potential Vacuum
Damage

Dear Mr. Seyfrit:

We have reviewed I. E. Bulletin No. 80-05 as it applies to tanks that hold radioactive liquid or gases at Waterford 3.

We have the following comments concerning the Gas Surge Tank, Holdup Tanks, Equipment Drain Tank and Spent Resin Tank:

1. Gas Surge Tank

We have performed calculations to verify the stresses in the gas surge tank under full vacuum. The stresses remain below code allowable stresses. Our calculations are sufficient to state that the gas surge tank will not be damaged when exposed to full vacuum.

2. Holdup Tanks

We have verified that the nitrogen makeup regulator is sized to prevent vacuum in the holdup tanks under maximum pumpout conditions.

Pressure in the common vent header is monitored by a pressure indicator in the control room and high and low pressure alarms. Each tank is monitored by high and low pressure alarms.

3. Equipment Drain Tank

We have verified that the nitrogen makeup regulator is sufficiently sized to prevent vacuum in the equipment drain tank under maximum pumpout conditions.

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The tank has a pressure indicator in the control room and high and low pressure alarms.

4. Spent Resin Tank

We have identified the potential for overstressing the spent resin tank if it is drained without being vented. This problem is being investigated and we will inform you of our plans for correction by July 11, 1980.

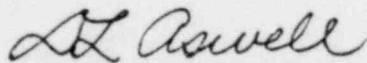
The remaining tanks at Waterford 3 are properly designed for the following reasons:

1. Design includes vents which are not isolable.
2. Tanks are designed for conditions of "0" psia internally, simultaneous with "15" psia external pressure.
3. There is no mechanism for producing a vacuum in the tank:
 - a. Neither pump nor elevation head is available to produce the vacuum.
 - b. Condensation vapors cannot be induced which, if condensed, would produce the vacuum.

All low pressure tanks at Waterford 3, containing radioactive liquids or gases, are either designed for full vacuum or the system is designed to prevent vacuum in the tanks. A table listing these tanks is attached, only the pertinent information is included.

If there are further questions, please advise.

Yours very truly,



D. L. Aswell

DLA:RRS:mcb

Attachment

cc: U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Division of Reactor Construction Inspection
Washington, D.C. 20555

Review of Waterford 3 Code Tanks for Potential Vacuum Damage

SYSTEM	TANK	ISOLATABLE	DES. PRESS	CONDENSABLE	PUMPED VACUUM	ACTION
		VENT YES/NO	INT/EXT* PSIA	INPUT, YES/NO	YES/NO	
RCS	Quench	--	0/15	--	--	None
CVCS	Volume Control	--	0/15	--	--	None
	Boric Acid Makeup	No	--	--	--	None
	Primary Water Storage	No	--	--	--	None
WMS	Spent Resin	Yes	65/15	No	Yes	In progress
	Gas Surge	Yes	55/15	Yes	Yes	None**
	Gas Decay	--	--	No	No	None
	Waste Concentrate Storage	Yes	--	No	Yes	None++
	Dewatering	Yes	--	No	Yes	None++
	Chemical Waste	Yes	--	No	Yes	None++
	Waste	No	--	--	--	None
	Waste Condensate	No	--	--	--	None
BMS	Flash	--	0/15	--	--	None
	Reactor Drain	--	0/15	--	--	None
	Holdup	Yes	13/15	Yes	Yes	None+
	Boric Acid Condensate	No	--	--	--	None
	Equipment Drain	Yes	25/15	No	Yes	None+
SIS	Safety Injection	--	--	No	No	None
	Refueling Water Storage	No+++	--	--	--	None

* INT/EXT - This notation means internal pressure & external pressure occurring simultaneously.

** Calculation has been performed to verify the tank is capable of withstanding full vacuum conditions.

+ Has a nitrogen supply to prevent vacuum in the hold-up tanks.

++ Has a locked open (LO) vent valve.

+++ Provided with vacuum breakers.