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Consists of evaluation regarding a potential limited boron dilution accident at an operatating PWR facility due to the indadverent injection of a portion of the coolant system while the reactor was in the cold shutdown condition...w/att figure 1 of a schematic of the piping arrangement from the spray additive tank to its various discharge points.... Notorized 12/22/77 2p + 1p PLANT NAME: DONALD G COOK UNITS 1 & 2 jcm 01/03/78		1 ENCL			
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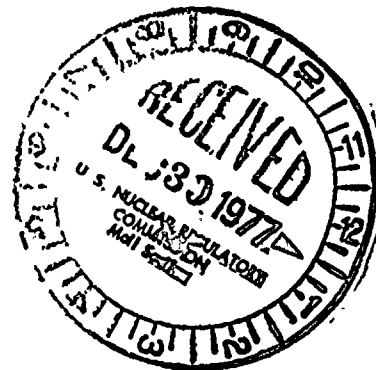
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JOHN TILLINGHAST
Vice Chairman
Engineering and Construction

December 22, 1977

Donald C. Cook Nuclear Plant
Units Nos. 1 and 2
Docket Nos. 50-315 and 50-316
DPR No. 58
CPPR No. 61

Mr. Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



Att: Don K. Davis, Acting Chief
Operating Reactors Branch 2.

On September 21, 1977, we received Mr. Don K. Davis' letter dated September 15, which transmitted details of a limited boron dilution accident at an operating PWR facility due to the inadvertent injection of a portion of the coolant system while the reactor was in the cold shutdown condition. This letter further requested that we perform an analysis to evaluate the potential for and consequences of such a boron dilution accident at the Donald C. Cook Nuclear Plant.

The above referenced letter indicated that this accident was caused while performing surveillance testing of the NaOH tank isolation valve, with the decay heat removal system lined up for reactor coolant recirculation. Upon resumption of coolant recirculation this NaOH was injected into the reactor coolant system.

In response to the above request we have investigated the potential for such an accident at both units of the Donald C. Cook Nuclear Plant. The results of this investigation are given below.

Attached Figure 1 is a schematic of the piping arrangement from the spray additive tank to its various discharge points.

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The diagram represents the valving arrangement for the ECCS during recirculation. The schematic shows that a single valve failure or misposition will not lead to direct injection of NaOH in the Reactor Coolant System. The spray additive tank contents can only be added to the Reactor Coolant System by the mispositioning of four (4) valves in series, namely, tank discharge valve, 2 locked-closed hand valves and the ECCS pump suction valves from the refueling water storage tank. Thus, our evaluation has clearly shown that multiple component failures and/or operation errors would be required to initiate the incident cited by Mr. Davis' letter.

Based on this evaluation, it is concluded that this incident could not occur at Donald C. Cook Nuclear Plant by the misposition of a single isolation valve or a single active failure of a component. Hence no corrective action is considered necessary to mitigate the concerns addressed by Mr. Davis' above referenced letter.

Very truly yours,


John Tillinghast

JT:dp

Sworn and Subscribed to before me
this 22nd day of December 1977 in
New York County, New York


Notary Public

KATHLEEN BARRY
NOTARY PUBLIC, State of New York
No. 41-4606792
Qualified in Queens County
Certificate filed in New York County
Commission Expires March 30, 1979

cc: G. Charnoff
R.J. Vollen
R.C. Callen
R.W. Steketee
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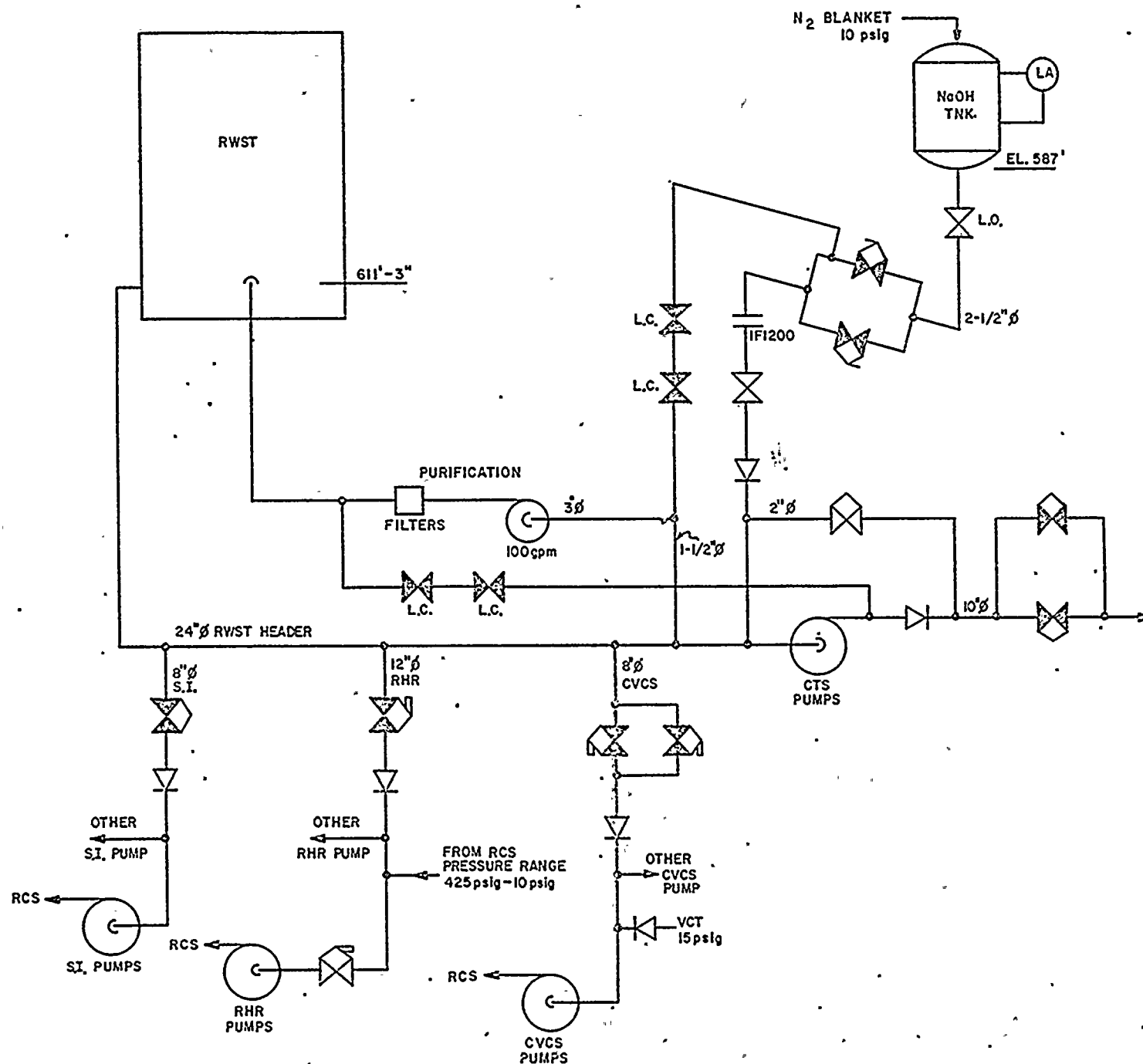


FIG.1 POTENTIAL PATHS FROM NaOH TANK TO REACTOR COOLANT SYSTEM

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