UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. for a Class 103 License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 2 of the San Onofre Nuclear Generating Station	))))))	Docket No. 50-361 Amendment Application No. 98

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Amendment Application No. 98.

This amendment application consists of a Proposed Change No. NPF-10-343 to Facility Operating License No. NPF-10. Proposed Change No. NPF-10-343 is a request to revise the UFSAR to allow the shutdown cooling (SDC) system to be used as the primary means of cooling the spent fuel pool. This changes the use of the SDC system as a credited backup system when available, to a primary means of spent fuel pool cooling. This change is needed to allow systems that normally provide cooling for the spent fuel pool to be removed from service for maintenance activities. Equipment which must be maintained includes cross train isolation valves of the component cooling water system and components common to both trains of the spent fuel pool cooling system. The shutdown cooling system will not be used as the primary means of spent fuel pool cooling when Technical Specifications require the shutdown cooling system to be operable for cooling the reactor core.

Subscribed on this 8th day of April, 1991.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By: _____
Harold B. Ray
Senior Vice President

Subscribed and sworn to before me this
8th day of April.

_____
Notary Public in and for
the State of California

OFFICIAL SEAL
MARIANE SANCHEZ
Notary Public-California
ORANGE COUNTY
My Commission Expires
October 14, 1994

James A. Beoletto
Attorney for Southern
California Edison Company

By: _____
James A. Beoletto

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. for a Class 103 License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 3 of the San Onofre Nuclear Generating Station	))))))	Docket No. 50-362 Amendment Application No. 83

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Amendment Application No. 83.

This amendment application consists of a Proposed Change No. NPF-15-343 to Facility Operating License No. NPF-15. Proposed Change No. NPF-15-343 is a request to revise the UFSAR to allow the shutdown cooling (SDC) system to be used as the primary means of cooling the spent fuel pool. This changes the use of the SDC system as a credited backup system when available, to a primary means of spent fuel pool cooling. This change is needed to allow systems that normally provide cooling for the spent fuel pool to be removed from service for maintenance activities. Equipment which must be maintained includes cross train isolation valves of the component cooling water system and components common to both trains of the spent fuel pool cooling system. The shutdown cooling system will not be used as the primary means of spent fuel pool cooling when Technical Specifications require the shutdown cooling system to be operable for cooling the reactor core.

Subscribed on this 8th day of April, 1991.

Respectfully submitted,

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By: Harold B. Ray
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James A. Beoletto
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James A. Beoletto

DESCRIPTION AND SAFETY ANALYSIS
PROPOSED LICENSE AMENDMENT TO USE THE SHUTDOWN COOLING SYSTEM AS A PRIMARY MEANS OF COOLING THE SPENT FUEL POOL
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

This is a request to allow the use of the shutdown cooling (SDC) system as a primary means of cooling the spent fuel pool (SFP). When the SDC system is available, it is currently approved as a backup cooling system for the SFP, as described in Section 9.1.3.3 and Table 9.1-3 of the Units 2 and 3 UFSAR. The SDC system may be used to cool the SFP when the Technical Specifications do not require the SDC system to be operable to cool the reactor core.

Description of Changes

Currently, Southern California Edison (SCE) takes credit for the SDC system as a backup means to cool the SFP whenever the SDC system is available. When the SDC system is operable it is available to cool the SFP when it is not required by the Technical Specifications to be available to cool the reactor core. We define a backup system as one that can perform the function of the primary system should the primary system become inoperable.

Therefore, to comply with UFSAR Section 9.1.3.3 and our definition of a backup system we may only use SDC as a backup and not plan to use SDC system as the primary means of cooling the SFP. However, maintenance will eventually be required on the cross-train isolation valves requiring the removal of the SFP cooling system from service. Therefore, an approved alternate primary cooling system for the SFP is needed.

SCE proposes to revise the UFSAR to allow use of the SDC system to provide primary cooling for the SFP. The SDC system may be used for primary cooling of the SFP when either one or both trains of normal SFP cooling are not available as follows:

During a Complete Core Offload from the Reactor Vessel.

SDC Requirements: One train of SDC shall be operable and available. (1 LPSI pump, 1 heat exchanger, Flow Path to and from the SFP, and the associated Diesel Generator)

SYSTEM DESCRIPTIONS

The SFP cooling system has two pumps, each powered from the class 1E electrical system, and two heat exchangers. The SFP cooling heat exchangers are cooled by the non-critical loop of the component cooling water (CCW)

system. The non-critical loop is supplied by either of two trains of the CCW system. Each CCW heat exchanger is cooled by an independent train of the salt water cooling (SWC) system which transfers heat to the ultimate heat sink, the Pacific Ocean.

The CCW system has two 100 percent capacity train aligned pumps and one 100 percent capacity swing pump, each powered from the class 1E electrical system, and two 100 percent capacity heat exchangers. The two independent critical loops are interconnected with a cross tie downstream of the heat exchangers and a cross tie upstream of the component cooling water pumps. Isolation valves for the two independent critical loops are provided in these two cross ties. The non-critical loop piping is connected between these cross ties such that it can be supplied from either critical loop. Each CCW critical loop operates independently of the other including when the opposite loop cross train isolation valves are isolated for maintenance. The piping configuration for cross train isolation valves HV-6212, -6213, -6218, -6219, and the non-critical loop is shown in Figure 1.

The SDC system has two 100 percent capacity heat exchangers, each cooled by a CCW critical loop. Flow through the SDC heat exchangers is provided by two low pressure safety injection pumps; each pump can be aligned to either SDC heat exchanger. The system can be aligned to recirculate either the reactor coolant system or the SFP. The process generally consists of the reversal of blind spectacle flanges, a fill and vent of the suction and discharge lines from the refueling water storage tank, and a valve alignment. This procedure will require several shifts to complete. The piping configuration for the blind spectacle flanges and the low pressure safety injection (LPSI) pumps is shown in Figure 2. The LPSI pumps and the SDC heat exchangers are shown in Figure 2A.

BACKGROUND

As explained in a letter from F. R. Nandy to the NRC dated July 30, 1990, a license amendment is required to allow use of the SDC system as primary cooling for the SFP. Examples of plant conditions when the SDC system is needed to provide primary cooling to the SFP are during a CCW non-critical loop outage or a dual train SFP cooling outage.

The following conditions must occur to allow maintenance to be performed on the CCW train isolation valves.

a. One train of CCW must be isolated and taken out of service,

b. The non-critical CCW loop, which provides normal cooling to the SFP, must be isolated and taken out of service, and

c. Alternate cooling must be provided for the spent fuel pool.

The following conditions allow for use of the SDC system to cool the SFP and meet the requirements a. and b. above:

a. Each SDC train is cooled by a corresponding CCW train.

b. Existing spectacle blind flanges may be used to align the SDC system to the SFP.

c. SDC is not needed to comply with any Technical Specification requirements during a full core offload.

Using the SDC system to cool the SFP will allow either train of CCW to be isolated and the non-critical CCW loop to be isolated and taken out of service, which, in combination, permit maintenance to be performed on the CCW train isolation valves. This will also allow maintenance on portions of the SFP cooling system that are not used by the SDC system when aligned to cool the SFP.

SCE currently takes credit for the SDC system, when it is available, as a backup cooling system for the SFP during complete core offloads. Calculations performed in support of the Units 2 and 3 reracking project show the SDC system (1 pump and 1 heat exchanger) can maintain the SFP temperature approximately 12 degrees cooler than the SFP cooling system (2 pumps and 2 heat exchangers) during a full core offload. Therefore, the function of cooling the SFP is not only maintained but improved.

The Standard Review Plan (SRP) 9.1.3 "Spent Fuel Pool Cooling and Cleanup System" Revision 1, issued in July 1981, considers a full core offload an abnormal situation. Section III.d. of SRP 9.1.3 states:

"A single active failure need not be considered for the abnormal case."

Therefore, SFP cooling may be provided by one train of SDC, one train of CCW, one train of SWC and the associated emergency diesel generator and be consistent with SRP 9.1.3.

Proposed Changes to the UFSAR

The following proposed changes are to be made to the Unit 2 and 3 UFSAR:

1. New paragraph added to Section 9.1.3.2 SYSTEM DESCRIPTION between second and third paragraph on page 9.1-14;

> The shutdown cooling system is a safety related, seismically qualified system which is powered by a class 1E electrical system. The cooling capacity of 1 train of the shutdown cooling system is sufficient to maintain the spent fuel pool temperature lower than the spent fuel pool cooling system. During a full core offload from the reactor vessel the shutdown cooling system is not required to be operable for

reactor core cooling. The shutdown cooling system (consisting of 1 LPSI pump, 1 heat exchanger, Flow Path to and from the SFP, and the associated Diesel Generator) may be aligned to cool the spent fuel pool.

2. The second to the last paragraph of Section 9.1.3.3 SAFETY EVALUATION on page 9.1-18 will be changed as follows;

Current Wording:[1]

"The shutdown cooling system, if available, may be used as backup cooling for the spent fuel pool when the full core is removed from the reactor vessel and this covers the possibility referred to under the remarks column of table 9.1-3."

Proposed wording (changes in bold print):

"The shutdown cooling system, if available, may be used as **an alternative means of** cooling the spent fuel pool when the full core is removed from the reactor vessel. This covers the possibility referred to under the remarks column of table 9.1-3."

Safety Analysis

The proposed change described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any one of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

There will be no increase in any accident probability as a result of this change because cooling to the SFP is maintained available at all times.

The rerack license amendment request, PCN 287, provides an analysis for a complete loss of cooling that results in boiling of the spent fuel pool. This was evaluated by the NRC and documented in the Safety Evaluation Report on the Units 2 and 3 Reracking, issued May 1, 1990.

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[1]This wording will be included in the upcoming UFSAR change as a result of the Units 2 and 3 reracking.

The SDC system is only to be used during a complete core offload when current Technical Specifications do not require SDC system operability for reactor core cooling.

The only potential accident remains to be a release of radioactivity from damaged fuel assemblies in the SFP. Both the SFP cooling system and the SDC systems are designed to maintain cooling capabilities to both the SFP and the core, respectively, which prevents this potential accident from occurring. In addition, the cooling capacity of each train in the SDC system is greater than the cooling capacity of the SFP cooling system.

During refueling outages there is only one complete train to provide a heat path from the SFP to the ultimate heat sink: one or two train(s) of the SFP cooling system, one train of CCW, one train of SWC, and the associated emergency diesel generator. The above is true whether or not the SDC system is available for back-up.

The proposed change will only affect the first component in the above chain. Thus SFP cooling will be provided by one train of SDC, one train of CCW, one train of SWC and the associated emergency diesel generator. This is allowable since during complete core offloads the single active failure criteria is not applicable for SFP cooling and Technical specifications for the component cooling water system and salt water cooling system allow system outages, requiring only one train to be in service in other than MODES 1-4.

Therefore, there is no increase in the probability or consequences of an accident previously evaluated.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

All systems are being used as they were designed to be used. No new systems or design changes are being implemented. The use of the SDC system as a backup system to cool the SFP was previously reviewed by the NRC. The only change we are proposing is the use of the SDC system as the primary mode of cooling the SFP during maintenance of the normal SFP cooling systems.

Therefore, the possibility of a new or different kind of accident than previously evaluated is not being introduced by this change.

3. Will operation of the facility in accordance with this proposed change involve a significant reduction in margin of safety?

Response: No

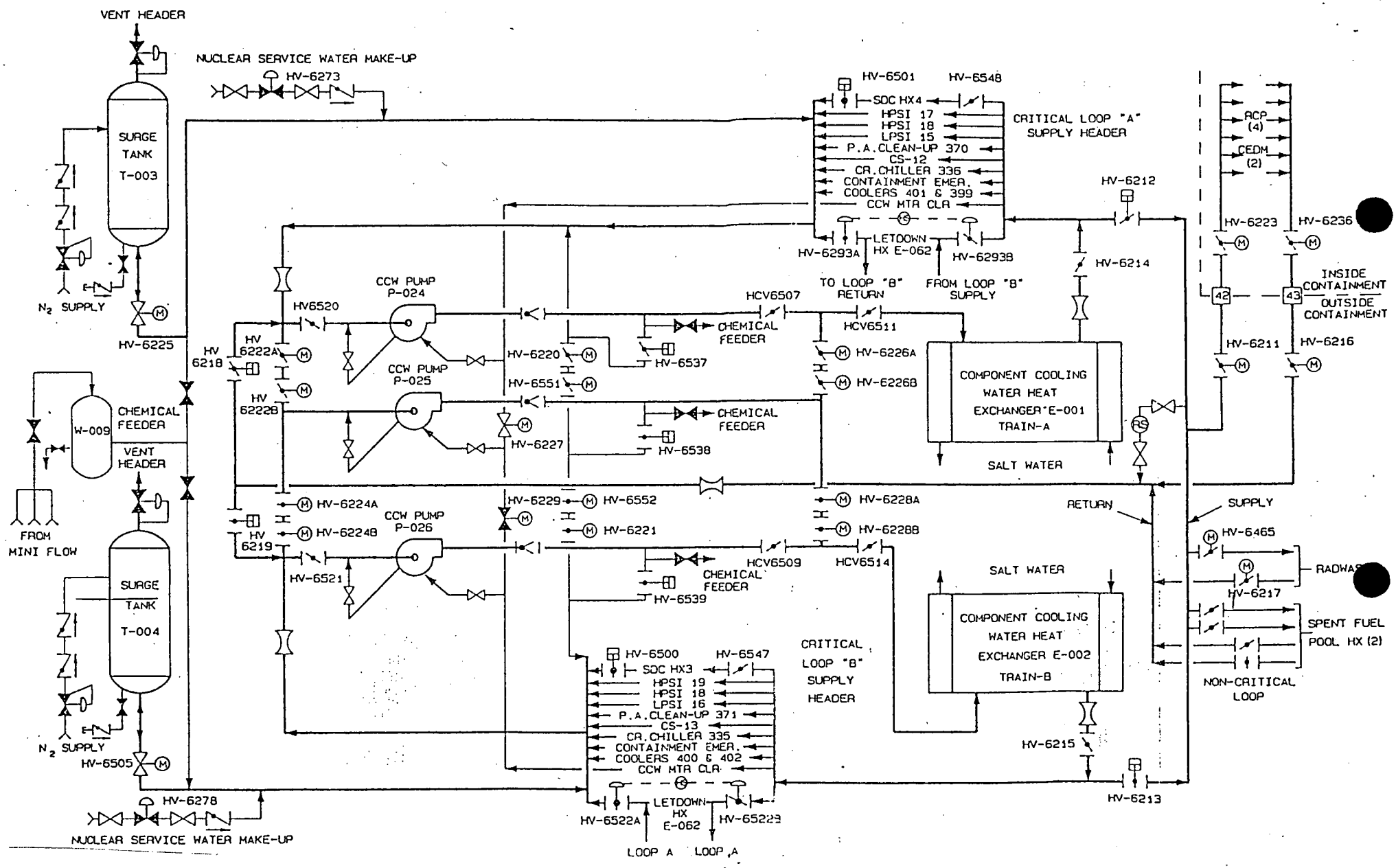
This proposed change does not cause a reduction in a margin of safety because, as before the change, only one train of cooling is relied upon from the Spent Fuel Pool to the Ultimate Heat Sink during a full core off load.

The proposed change does not reduce the capability of heat transfer, and it does not change the number of trains required to be available to cool either the core or the SFP. The use of the SDC system has been approved by the NRC as an acceptable cooling source for the SFP in the safety evaluation report for the Units 2 and 3 reracking, issued May 1, 1990. In addition, the cooling capacity of the SDC system is greater than the cooling capacity of the SFP cooling system. Therefore, the margin a safety is increased, not reduced.

Safety and Significant Hazards Determination

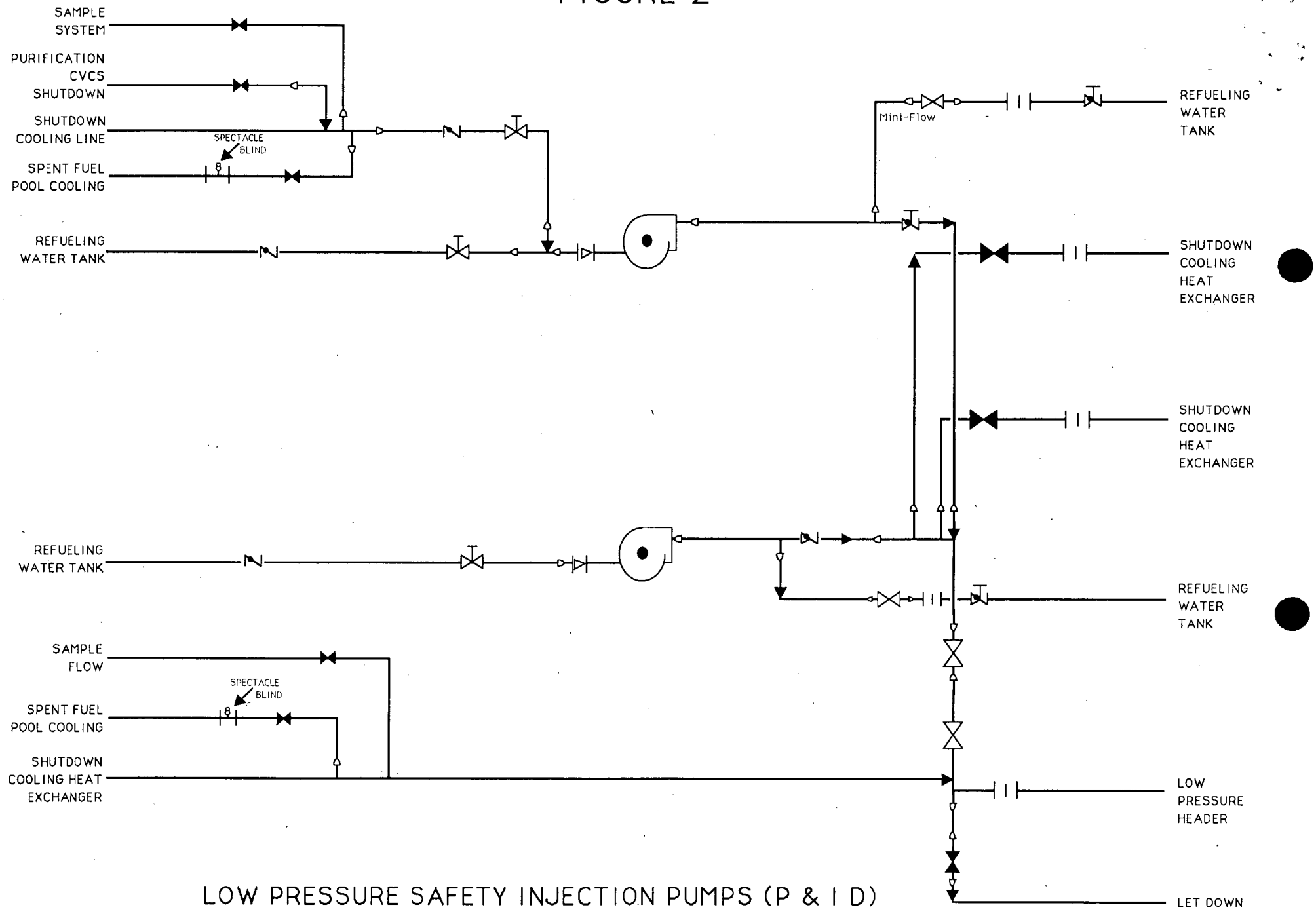
Based on the above Safety Analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the Station on the environment as described in the NRC Final Environmental Statement.

FIGURE 1



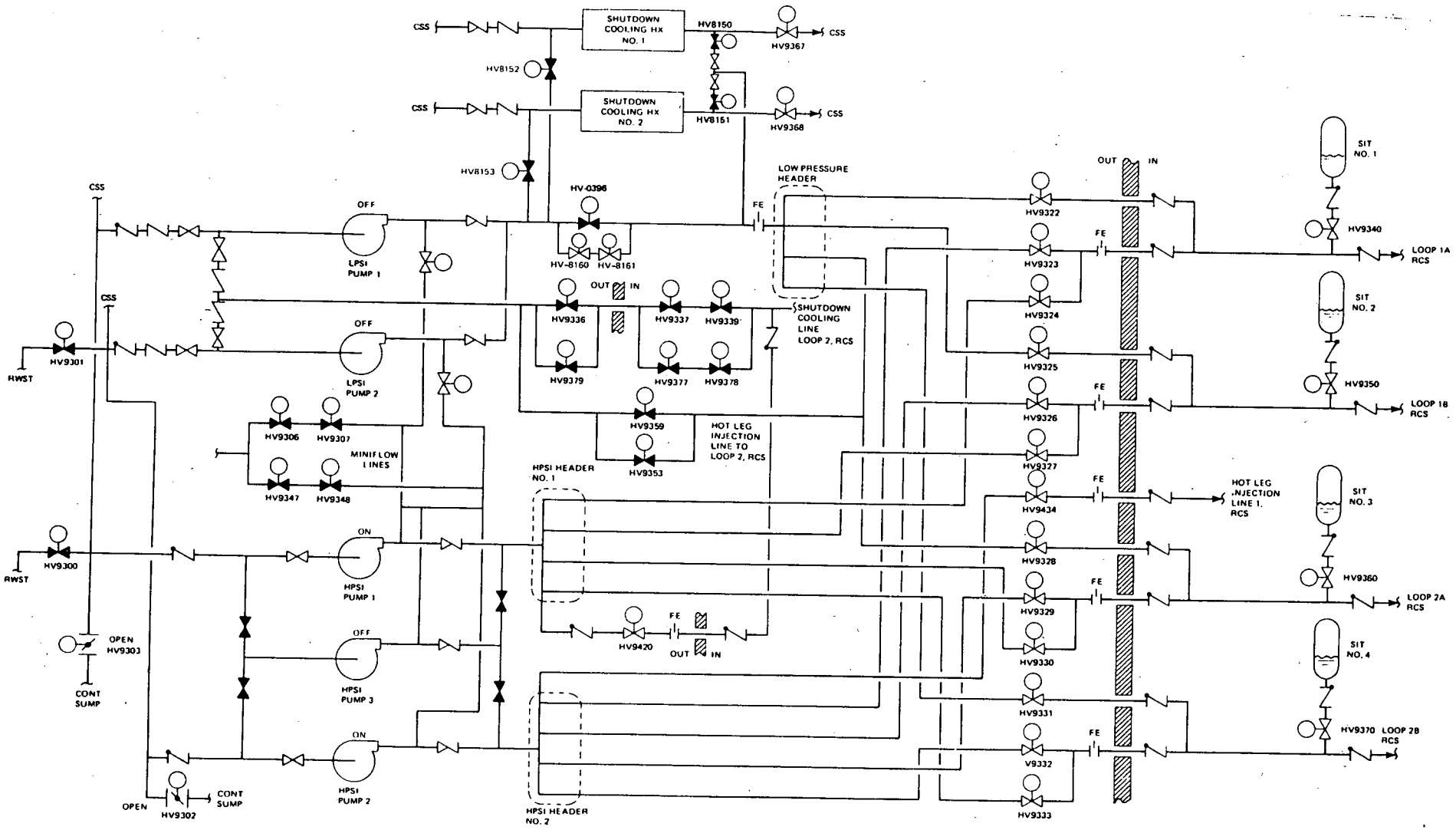
COMPONENT COOLING WATER (P & I D)

FIGURE 2



LOW PRESSURE SAFETY INJECTION PUMPS (P & I D)

FIGURE 2A



SHUTDOWN COOLING SYSTEM (P & I D)