ATTACHMENT A

APPLICATION FOR AMENDMENT
TO OPERATING LICENSING

Technical Specification
Page Revisions

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
Facility Operating License No. DPR-26
June, 1985

requirements of 3.3.B-1 within the time period specified, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirements of 3.3.B-1 are not satisified within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures.

a. One fan cooler unit may be inoperable during normal reactor operation for a period not to exceed 7 days provided both containment spray pumps are operable.

b. One containment spray pump may be inoperable during normal reactor operation, for a period not to exceed 24 hours, provided the five fan cooler units and the remaining containment spray pump are operable.

c. Any valve required for the functioning of the system during and following accident conditions may be inoperable provided it is restored to operable status within 7 days or 24 hours for the fan cooler or containment spray systems respectively, and all valves in the system that provide the duplicate function are operable.

C. Isolation Valve Seal Water System (IVSWS)

1. The reactor shall not be brought above cold shutdown unless the following requirements are met:

   a. The IVSWS shall be operable.

   b. The IVSWS tank shall be maintained at a minimum pressure of 52 psig and contain a minimum of 144 gallons of water.

TABLE 3.6-1

NON-AUTOMATIC CONTAINMENT ISOLATION VALVES OPEN CONTINUOUSLY OR INTERMITTENTLY FOR PLANT OPERATION

| | | | |
|---|---|---|---|
| 3418 | 851A | SWN-44-5-A or B(1) | 1814B |
| 3419 | 850A | SWN-51-5(1) | 1814C |
| | | SWN-44-1-A or B(1) | |
| 4136 | 851B | SWN-51-1(1) | 5018 |
| | | | 5019 |
| 744 | 850B | SWN-44-2-A or B(1) | 5020 |
| | | SWN-51-2(1) | |
| 888A | 859A | SWN-44-3-A or B(1) | 5021 |
| 888B | 859C | SWN-51-3(1) | 5022 |
| 958 | 863 | | 5023 |
| 959 | 3416 | SWN-44-4-A or B(1) | 5024 |
| 990D | 3417 | SWN-51-4(1) | 5025 |
| 1870 | 5459 | SWN-71-5-A or B(1) | E-2 |
| 743 | 753H | SWN-71-1-A or B(1) | E-1 |
| 732 | 753G | SWN-71-2-A or B(1) | E-3 |
| 885A | SWN-41-5-A or B(1) | SWN-71-3-A or B(1) | E-5 |
| 885B | SWN-42-5 | SWN-71-4-A or B(1) | MW-17 |
| | | | MW-17-1 |
| 205 | SWN-43-5 | SA-24 | 85C |
| 226 | SWN-41-1-A or B(1) | SA-24-1 | 85D |
| 227 | SWN-42-1 | PCV-1111-1 | 95C |
| 250A | SWN-43-1 | PCV-1111-2 | 95D |
| 4925 | SWN-41-2-A or B(1) | 580A | |
| 250B | SWN-42-2 | 580B | |
| 4926 | SWN-43-2 | UH-43 | |
| 250C | SWN-41-3-A or B(1) | UH-44 | |
| 4927 | SWN-42-3 | 990A | |
| 250D | SWN-43-3 | 990B | |
| 4928 | SWN-41-4-A or B(1) | 1814A | |
| 869A | SWN-42-4 | | |
| 878A | SWN-43-4 | | |
| 869B | | | |

(1) Either A or B valve(s) may serve as the required containment isolation valve(s) for the SWN-41, SWN-44 and SWN-71 series. Designation of the B valve(s) in the SWN-44 series requires the codesignation of the SWN-51 valve(s) associated with the penetration(s) as an additional required containment isolation valve(s).

TABLE 4.4-1 (Page 7 of 14)
CONTAINMENT ISOLATION VALVES

| Valve No. | System[1] | Test Fluid[2] | Minimum Test Pressure (PSIG) |
|---|---|---|---|
| SWN-41-5-A | Cont. Fan Cooler-Ser. Wtr. | Water[6] | 52 |
| SWN-41-5-B | " " " " " | Water[6] | 52 |
| SWN-43-5 | " " " " " | Water[6] | 52 |
| SWN-42-5 | " " " " " | Water[6] | 52 |
| SWN-41-1-A | " " " " " | Water[6] | 52 |
| SWN-41-1-B | " " " " " | Water[6] | 52 |
| SWN-43-1 | " " " " " | Water[6] | 52 |
| SWN-42-1 | " " " " " | Water[6] | 52 |
| SWN-41-2-A | " " " " " | Water[6] | 52 |
| SWN-41-2-B | " " " " " | Water[6] | 52 |

TABLE 4.4-1 (Page 8 of 14)
CONTAINMENT ISOLATION VALVES

| Valve No. | System[1] | Test Fluid[2] | Minimum Test Pressure (PSIG) |
|---|---|---|---|
| SWN-43-2 | Cont. Fan Cooler-Ser. Wtr. | Water[6] | 52 |
| SWN-42-2 | " " " " " | Water[6] | 52 |
| SWN-41-3-A | " " " " " | Water[6] | 52 |
| SWN-41-3-B | " " " " " | Water[6] | 52 |
| SWN-43-3 | " " " " " | Water[6] | 52 |
| SWN-42-3 | " " " " " | Water[6] | 52 |
| SWN-41-4-A | " " " " " | Water[6] | 52 |
| SWN-41-4-B | " " " " " | Water[6] | 52 |
| SWN-43-4 | " " " " " | Water[6] | 52 |
| SWN-42-4 | " " " " " | Water[6] | 52 |
| SWN-44-5-A | " " " " " | Water[6] | 52 |
| SWN-44-5-B | " " " " " | Water[6] | 52 |
| SWN-51-5 | " " " " " | Water[6] | 52 |
| SWN-44-1-A | " " " " " | Water[6] | 52 |
| SWN-44-1-B | " " " " " | Water[6] | 52 |
| SWN-51-1 | " " " " " | Water[6] | 52 |

TABLE 4.4-1 (Page 9 of 14)
CONTAINMENT ISOLATION VALVES

| Valve No. | System[1] | Test Fluid[2] | Minimum Test Pressure (PSIG) |
|---|---|---|---|
| SWN-44-2-A | Cont. Fan Cooler-Ser. Wtr. | Water[6] | 52 |
| SWN-44-2-B | " " " " " | Water[6] | 52 |
| SWN-51-2 | " " " " " | Water[6] | 52 |
| SWN-44-3-A | " " " " " | Water[6] | 52 |
| SWN-44-3-B | " " " " " | Water[6] | 52 |
| SWN-51-3 | " " " " " | Water[6] | 52 |
| SWN-44-4-A | " " " " " | Water[6] | 52 |
| SWN-44-4-B | " " " " " | Water[6] | 52 |
| SWN-51-4 | " " " " " | Water[6] | 52 |
| SWN-71-5-A | " " " " " | Water[6] | 52 |
| SWN-71-5-B | " " " " " | Water[6] | 52 |
| SWN-71-1-A | " " " " " | Water[6] | 52 |
| SWN-71-1-B | " " " " " | Water[6] | 52 |
| SWN-71-2-A | " " " " " | Water[6] | 52 |
| SWN-71-2-B | " " " " " | Water[6] | 52 |
| SWN-71-3-A | " " " " " | Water[6] | 52 |
| SWN-71-3-B | " " " " " | Water[6] | 52 |

TABLE 4.4-1 (Page 10 of 14)
CONTAINMENT ISOLATION VALVES

| Valve No. | System[1] | Test Fluid[2] | Minimum Test Pressure (PSIG) |
|---|---|---|---|
| SWN-71-4-A | Cont. Fan Cooler-Ser. Wtr. | Water[6] | 52 |
| SNW-71-4-B | " " " " " | Water[6] | 52 |
| SA-24 | Service Air to Cont. | Water[4] | 52 |
| SA-24-1 | " " " " " | Water[4] | 52 |
| 580A | Dead Weight Tester | Gas | 47 |
| 580B | " " " " " | Gas | 47 |
| UH-43 | Auxiliary Steam System | Water[4] | 52 |
| UH-44 | " " " " " | Water[4] | 52 |
| MW-17 | City Wtr. to Cont. | Water[4] | 52 |
| MW-17-1 | " " " " " | Water[4] | 52 |
| 1170 | Cont. Purge System | Gas[7] | 47 |
| 1171 | " " " " " | Gas[7] | 47 |
| 1172 | " " " " " | Gas[7] | 47 |
| 1173 | " " " " " | Gas[7] | 47 |

TABLE 4.4-1 (Page 14 of 14)
CONTAINMENT ISOLATION VALVES

| Valve No. | System[1] | Test Fluid[2] | Minimum Test Pressure (PSIG) |
|---|---|---|---|
| 95A | Equipment Airlock | Gas | 47 |
| 95B | " " | Gas | 47 |
| 95C | " " | Gas[7] | 47 |
| 95D | " " | Gas[7] | 47 |
| 4399 | Sample Return to Cont. Sump. | Water[4] | 52 |
| 5132 | " " | Water[4] | 52 |

Notes:

1. System description in which valve is located.
2. Gas Test Fluid indicates either nitrogen or air as test medium.
3. Testable only when at cold shutdown.
4. Isolation Valve Seal Water System.
5. Sealed by Residual Heat Removal System fluid.
6. Sealed by Service Water System. Either A or B valve(s) may serve as the required containment isolation valve(s) for the SWN-41, SWN-44 and SWN-71 series. Designation of the B valve(s) in the SWN-44 series requires the codesignation of the SWN-51 valve(s) associated with the penetration(s) as an additional required containment isolation valve(s).
7. Sealed by Weld Channel and Penetration Pressurization System.

ATTACHMENT B

# APPLICATION FOR AMENDMENT TO OPERATING LICENSE

## Safety Assessment

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
Facility Operating Licensing No. DPR-26
June, 1985

## SAFETY ASSESSMENT

I. Proposed Change To Fan Cooler Unit 23, 24, 25 Out-Of-Service Time

Discussion:

The containment fan cooler units and associated service water supplies, together with the containment spray system are principal plant safeguards systems required for post-accident containment heat removal and atmospheric clean-up. Using design basis assumptions, five fan cooler units provide redundant heat removal capability to the containment spray system. Alternately, three of five fan cooler units together with one of two containment spray pumps (injection phase) and one of four recirculation/RHR pumps (recirculation phase) provide heat removal capability the equivalent of either system alone. Consistent with General Design Criteria requirements, both the fan cooler units and the containment spray system are provided with off-site and on-site (emergency diesel generator) power supplies. In addition, an on-site gas turbine generator and two gas turbine generators at the Buchanan substation, adjacent to the site, support these systems.

Maintaining a high level of safeguard system reliability and availability is commensurate with assuring the health and safety of the public; therefore, continued power operation is restricted by Technical Specifications, contingent upon the operability of these systems.

Current Technical Specification Bases

Existing Technical Specification 3.3.B.2.a limits continued power operation to either 24 hours if fan cooler 23, 24 or 25 is out of service, or 7 days if fan cooler 21 or 22 is out of service, provided the containment spray system is operable. The functional arrangement of the five fan cooler units and two containment spray pumps on the three (50% capacity) diesel generator buses establishes the basis for the differing out-of-service times. The arrangement is depicted in Figure 1.

On a functional basis, the minimum set of safeguards equipment necessary to meet design basis containment heat removal objectives consists of 3 fan cooler units and one containment spray pump (110% combined design heat removal capacity). Any two of the three diesel generators are required to support this equipment complement.

Success is defined as having 100% containment design heat removal capacity available for mitigation such that the containment pressure transient assumptions remain valid. To establish the logic for the different out-of-service times, four discrete conditions are postulated and all are assumed to have occured. These conditions are:

- a demand for the containment heat removal and atmospheric clean-up equipment exists (e.g. DBA-LOCA),

- the demand occurs simultaneous with a loss of all off-site and on-site power except for the emergency diesel generators,

- one fan cooler unit is out-of-service, as permitted by Technical Specifications, and not available to participate in mitigating the event.

- a single failure disables one of the three diesel generators, such that the equipment served by that diesel is not available for accident mitigation.

The limiting combination of available diesels and containment heat removal equipment serves to establish the shortest allowable out-of-service times for the two groups of fan cooler units. From Figure 1, under the conditions noted above, with either fan cooler unit 23, 24 or 25 out-of-serivce, the failure of diesel generator 21 results in 90% remaining design heat removal capacity (2 fan cooler units and one containment spray pump) available. For any other combination of equipment out-of-service and a single diesel failure, the 100% containment heat removal capacity success criterion is satisfied by the remaining equipment. Thus with fan cooler unit 23, 24, or 25 out-of-service, a subsequent failure of diesel generator 21 results in less than 100% capability available. With fan cooler unit 21 or 22 out-of-service a subsequent single failure of any diesel generator still results in greater than 100% capability available. The limiting

case (fan cooler unit 23, 24 or 25 out-of-service) is established with the shorter allowable out-of-service time of 24 hours chosen arbitrarily, the other case (fan cooler unit 21 or 22 out-of-service) is afforded a relatively longer seven day out-of-service time. The out-of-service times selected are based on engineering judgements made in the early 1970's at the time the Technical Specifications were being developed.

The bases for this particular specification are an example of the extreme conservatism inherent in the Indian Point Unit No. 2 plant design and operation. The probability of a design basis event together with a loss of all offsite power concurrent with one fan cooler unit out-of-service and a specific single diesel failure is necessarily very low. It should be noted that for the limiting case, although the 100% design capability FSAR success criteria are not met, the remaining two fan cooler units and one containment spray pump (90% combined capacity) will keep the peak calculated containment pressure reached under DBA conditions below the containment design pressure of 47 psig. The peak calculated containment pressure reached assuming FSAR success criteria (three fan cooler units and one containment spray pump) is approximately 40 psig. Ultimate strength of the Indian Point Unit No. 2 containment building has been calculated in excess of 120 psig.

This is in marked contrast to the reference plant used as the model for NRC's Standard Technical Specifications for Westinghouse PWRs. The

reference plant has either two 100% capacity containment spray pumps powered from two 100% capacity diesel generators or optionally two 50% capacity containment spray pumps with four 25% capacity fan cooler units powered from two 100% capacity diesel generators.

In the optional design the same set of conditions applied to the Indian Point design results in one fan cooler unit and one containment spray pump remaining available or 75% total design capabiliy versus 90% total design capacity for Indian Point. In the simple two spray design, the same combination of conditions further reduces containment heat removal capacity. A 7 day out-of-service time applies to the optional design versus 24 hours for Indian Point Unit No. 2.

Negative Impact of 24 Hour Out-Of-Service Time

Twelve years of operating experience has led to the conclusion that the 24 hour out-of-service time associated with fan cooler units 23, 24 and 25 is overly restrictive and may well serve to reduce available safety margins. Most corrective actions associated with the fan cooler units that can be physically accomplished with the unit at power are constrained by the 24 hour out-of-service time. The inevitable result is corrective actions which, while fully acceptable from a safety standpoint, are less than optimum from a practical operations standpoint. The short out-of-service time can potentially result in otherwise unnecessary heatup and cooldown transients with attendent challenges to safety systems.

An example is isolating a fan cooler unit coil bank to isolate a leak, since this can be done promptly, rather than repairing or plugging the leaking tube. This can be done if sufficient heat transfer capability exists to permit isolating one such bank while still satisfying design objectives. Repairing/plugging requires locating the defective tube, repairing or plugging it, and hydrostatically testing the unit. This is considerably more time consuming than isolating a bank. Although isolating a bank is an acceptable, safe corrective action, it reduces the heat transfer area by the equivalent of 72 tubes rather than by one tube if the leaking tube is plugged, or not at all, if the leaking tube is repaired. Thus the margins available in plant design are reduced within acceptable limits, but the reduction is considerably more than would be necessary if plugging/repair were more viable. The present, short allowable out-of-service time, precludes plugging/repairing, the preferred alternative. Once the bank isolation limit is reached any subsequent tube leaks will likely require the initiation of a controlled shutdown to the cold shutdown condition since, at that point the only alternative is repair/plugging or bank replacement. Extending the 24 hour allowable out-of-service time for fan cooler units 23, 24 and 25 would minimize the potential for such shutdowns and in so doing, avoid otherwise unnecessary cycling of the unit with potential challenges to safety systems.

A change to Technical Specification 3.3.B.2.a. to modify the 24 hour LCO for fan cooler units 23, 24 and 25 to seven days is therefore

proposed. This proposed change is consistent with provisions contained in NRC's Standard Technical Specifications for Westinghouse PWRs with atmospheric containments. The overall risk associated with the operation of Indian Point Unit No. 2 as a result of the proposed LCO change has been assessed using the Indian Point Probabilistic Safety Study (IPPSS). Based on the (IPPSS), the overall risk associated with the operation of Indian Point Unit No. 2 will be unaffected by the proposed LCO change. The service water system nuclear header, required to support fan cooler system operation, dominates the event tree calculations. Failure of the service water header continues to dominate the event tree calculations for the proposed LCO change. Therefore, the proposed change does not impact plant risk.

Basis for no significant hazard consideration determination

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48 FR 14870). Example (vi) of those involving no significant hazards considerations discusses a change which may reduce a safety margin but where the results are clearly within all acceptable criteria with respect to the system or component. The proposed revision to specification 3.3.B.2.a. to modify the allowable out-of-service time from 24 hours to seven days could be interpreted as reducing a safety margin; however, on the basis of the justifications previously discussed, and the out-of-service time

allowed by the Standard Technical Specifications, this proposed change clearly meets all relevant acceptance criteria. Consistent with the Commission's criteria for determining whether a proposed amendment to an operating license involves no significant hazards considerations, 10 CFR 50.92 (48FR14871), we have determined that the proposed changes will not involve a significant increase in the probability or consequences of an accident previously evaluated; nor create the possibility of a new or different kind of accident from any previously evaluated; nor involve a significant reduction in a margin of safety.

The proposed revision contains editorial changes for consistency with the language used in other areas of the Indian Point Unit No. 2 Technical Specifications. The requirement to test redundant components daily when a component is inoperable has been eliminated consistent with applicable staff concerns that such testing has the potential for placing the plant in a more vulnerable mode (see NUREG-1024, Technical Specifications -- Enhancing the Safety Impact, November 1983, Section 3.5).

II. Proposed Change to Containment Isolation Valve Provisions

Discussion:

The proposed changes to Tables 3.6-1 and 4.4-1 permit the use of existing installed back-up valving in the service water supply and return lines associated with the FCU's as alternate containment isolation valves when so designated by plant management. The purpose

of this change is to permit greater operational flexibility for complying with containment isolation requirements and effecting isolation of fan coolers, if required.

By design, double boundary containment isolation requirements for these lines are satisfied by the closed system boundary inside containment and a containment isolation valve outside containment. Figure 2 depicts these provisions for a single fan cooler unit. In the event that a containment isolation valve becomes inoperable, this proposed change would permit redesignating the alternate containment isolation valve as the "required" containment isolation valve in that line, provided the surveillance requirements for the alternate valve have been satisfied. The existing installed back-up valves are the same type and manufacture as the valves currently designated as containment isolation valves.

Basis for no significant hazards consideration determination

The Commission has provided criteria for determining whether a proposed amendment to an operating license involves no significant hazards considerations, 10 CFR 50.92 (48FR14871). The proposed changes to Table 3.6-1 would permit redesignating installed back-up valves in the fan cooler unit service water supply and return lines as containment isolation valves when necessary to satisfy containment isolation requirements. The proposed changes to Table 4.4-1 add the installed back-up valves to the list of containment isolation valves subject to

surveillance requirements. Accordingly, redesignation of an alternate valve(s) as a required containment isolation valve(s) is contingent upon the alternate valve(s) having satisfied the surveillance requirements.

Since applicable containment isolation requirements will continue to be satisfied under the proposed changes, we have concluded that the proposed changes will not involve a significant increase in the probability or consequences of an accident previously evaluated; nor create the possibility of a new or different kind of accident from any previously evaluated; nor involve a significant reduction in a margin of safety.

Therefore, since this application for amendment involves proposed changes that satisfy the Commission's criteria for a determination of no significant hazards consideration or are otherwise consistent with examples of changes for which no significant hazards consideration exists, we have determined that this application involves no significant hazards consideration.

The proposed changes have been reviewed by the Station Nuclear Safety Committee and the Consolidated Edison Nuclear Facilities Safety Committees. Both committees concur that these changes do not represent a significant hazards consideration and will not cause any change in the types or increase in the amounts of effluents, or any change in the authorized power level of the facility.

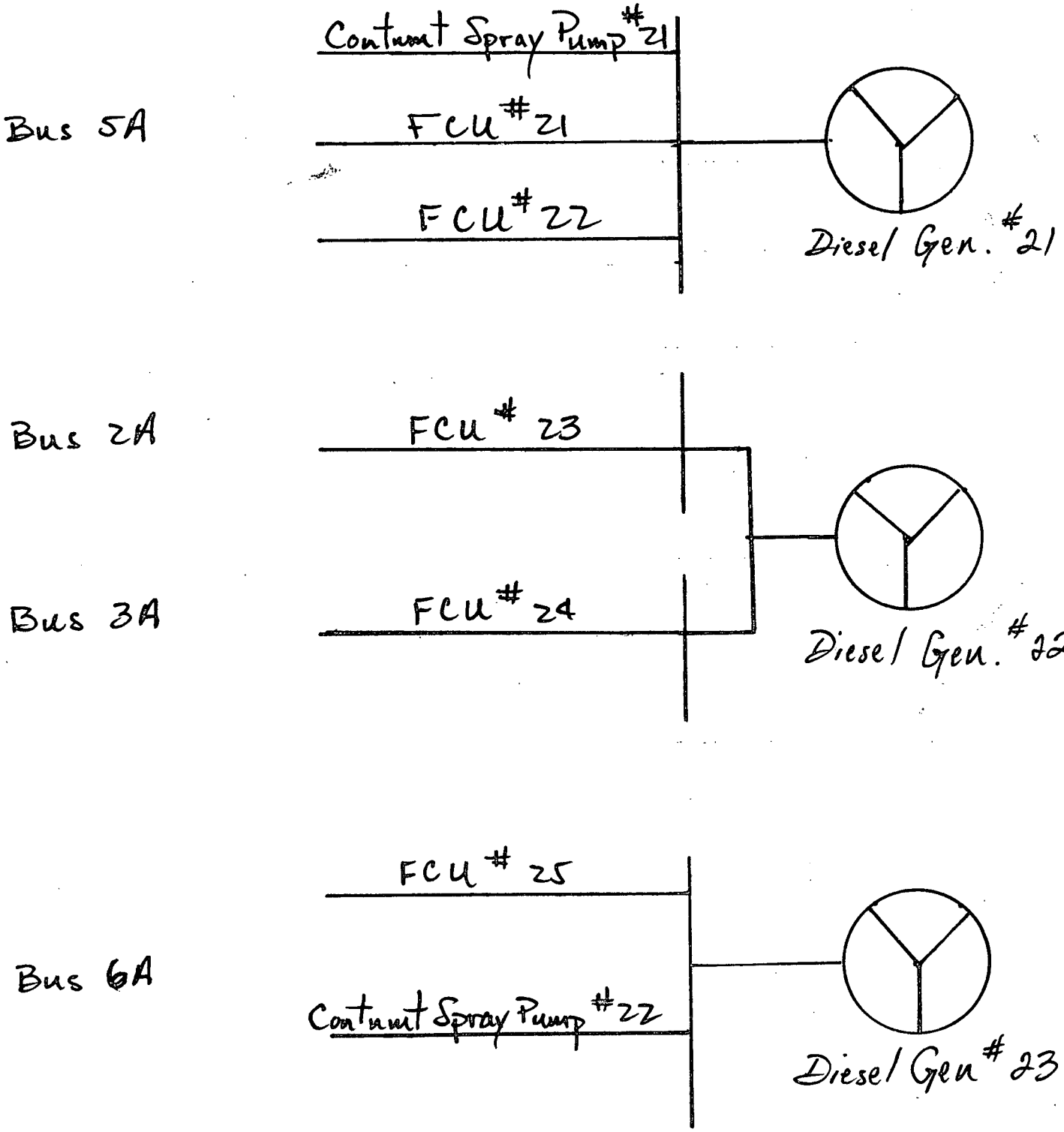
Bus 5A
Containment Spray Pump #21
FCU #21
FCU #22
Diesel Gen. #21
Bus 2A
Bus 3A
FCU #23
FCU #24
Diesel Gen. #22
Bus 6A
FCU #25
Containment Spray Pump #22
Diesel Gen #23

Figure 1

# Containment Isolation

(typical for each FCU)

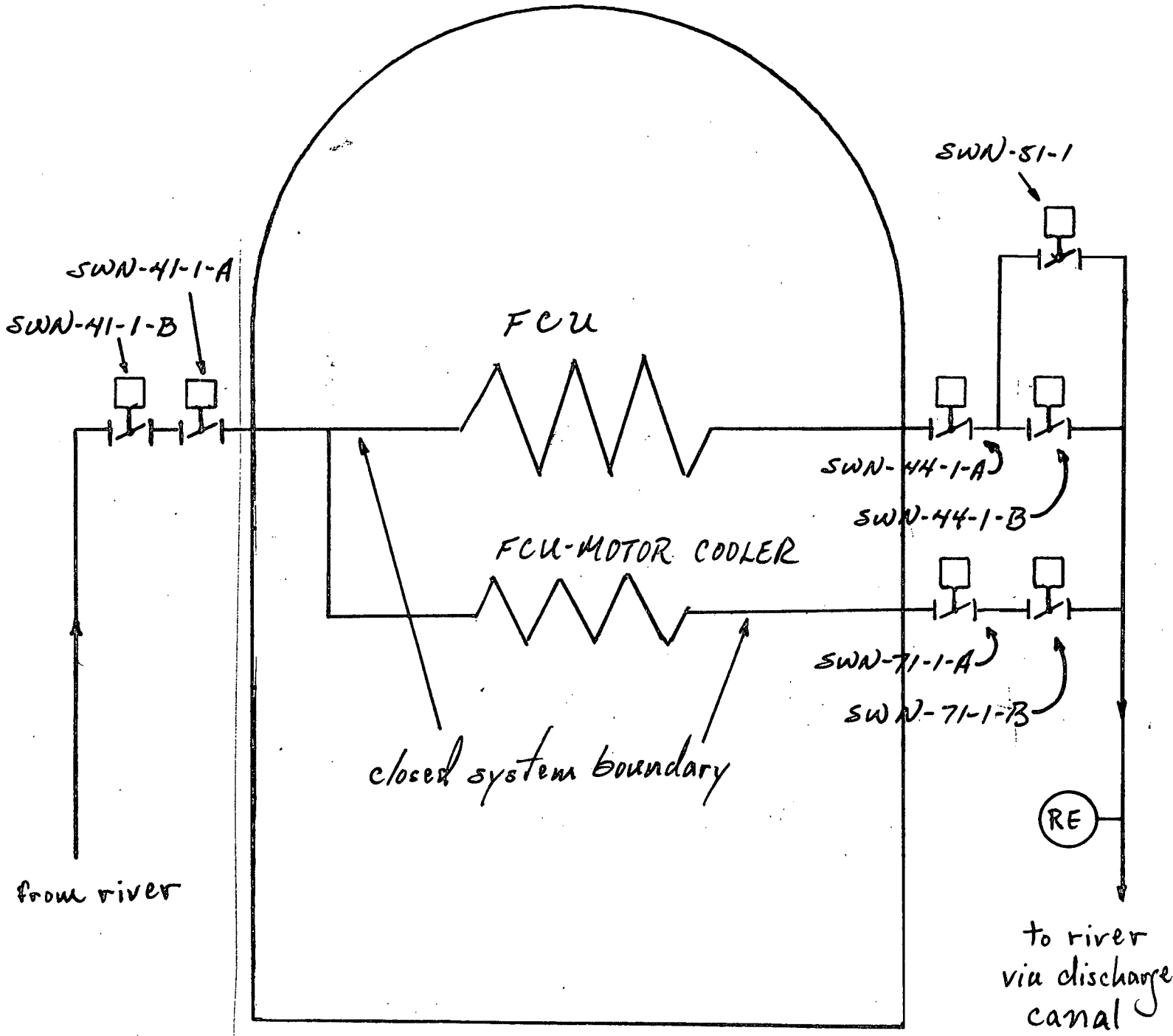


Figure 2