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SUBJECT: LER 90-010-00:on 900613,potential failure of engineered safeguards sys by improper valve failure mode.
W/9 ltr.

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DUKE POWER

July 13, 1990

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
LER 269/90-10

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report (LER) 269/90-10 concerning potential failure of Engineered Safeguards System by improper valve failure mode due to design deficiency, deficient documentation.

This report is being submitted in accordance with 10 CFR 50.73 (a)(2)(ii)(B). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H. B. Barron
Station Manager

RSM/ftr

Attachment

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NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Oconee Nuclear Station, Unit 1	0 5 0 0 0 2 6 9	1 OF 1 3

TITLE (4) Potential Failure of Engineered Safeguards System by Improper Valve Failure Mode Due to Design Deficiency, Deficient Documentation

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 NAMES	DOCKET NUMBER(S)
									Oconee, Unit 2	0 5 0 0 0 2 7 0
0 6	1 3	9 0	9 0	– 0 1 0	– 0 0	0 7	1 3	9 0	Oconee, Unit 3	0 5 0 0 0 2 8 7

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	X 50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Henry R. Lowery, Chairman Oconee Safety Review Group	8 0 3 8 8 5 – 3 0 3 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	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 fifteen single-space typewritten lines) (16)

At 1700 hours on June 13, 1990, with Unit 1 at 97% and Units 2 and 3 at 100 % full power, both redundant trains of the Penetration Room Ventilation System, an Engineered Safeguards air filtration system, were declared inoperable on all three units. As a result of an inspection by a NRC Resident Inspector, it was discovered that pneumatic throttle valves in each train fail closed on loss of Instrument Air, resulting in potential loss of system function, rather than open as indicated in the FSAR. However, investigation revealed that failure in either the open or closed position could result in loss of system function under certain accident conditions. All units were placed in a Technical Specification action statement requiring the units to be shutdown within 12 hours. Travel stops were installed on the valve stems and tests were performed to verify the system would provide design flow without instrument air. The systems were returned to service by 0141 hours, June 14. The root cause was Design Deficiency, Deficient Documentation.

BACKGROUND

The Penetration Room is a secondary containment structure where the majority of electrical and mechanical lines penetrate the Reactor Building [EIIS:NH] (RB). The Final Safety Analysis Report (FSAR) assumes that, in the event of a LOCA, 50% of the RB leakage is into the Penetration Room. The Penetration Room Ventilation System [EIIS:VC] (PRVS) (See Attachment 1) was included on each Oconee unit as an Engineered Safeguards [EIIS:JE] (ES) system to mitigate the consequences of a postulated maximum hypothetical accident (MHA) by filtering this leakage. The PRVS performs no routine functions and, except for testing or maintenance, stays in stand-by mode awaiting actuation by the ES logic in response to either low Reactor Coolant System [EIIS: AS] pressure or high RB pressure. The PRVS is composed of two redundant exhaust fans and filter trains which take suction on the Penetration Room, pull the air through a set of pre-filters, High Efficiency Particulate Air (HEPA) filters, and carbon adsorber filters, and discharge the air to the unit vent.

Flow rate is maintained by two pneumatically operated valves: PR-13 (PR Fan "A" Inlet Control) and PR-17 (PR Fan "B" Inlet Control). These valves can be remotely operated from a location immediately outside the room containing the PRVS. Under normal circumstances, they are set during testing and maintained in the throttled position which permits system design flow of 1000 +/- 100 cfm.

As the system operates, radioactive iodine leaking from the reactor building into the Penetration Room is caught by the filters. The system design postulated that at some point of operation, the fan on one of the filter trains would fail. In order to assure that decay heat from the adsorbed iodine in the idled train was not allowed to heat up the carbon to the point of ignition, a pneumatically operated cross-connect valve, PR-20, was included. This valve could be opened following fan failure to permit some air to be pulled through the affected filter bank, cooling the carbon.

The source of compressed air for pneumatic operators is the Instrument Air system [EIIS:LD] (IA). In a loss of offsite power scenario, the power supply breakers for the IA system compressors are tripped and are not automatically restarted. Also, very little of the IA system piping and tubing is seismically qualified. Therefore, for loss of offsite power or seismic event scenarios, loss of Instrument Air is assumed.

Technical Specifications require shutdown of the affected unit within 12 hours whenever both trains of PRVS are inoperable while containment integrity is required.

EVENT DESCRIPTION

During the design phase of Oconee Nuclear Station, the Penetration Room Ventilation System (PRVS) was included as an Engineered Safeguards (ES) system to mitigate the consequences of a postulated maximum hypothetical accident (MHA). The original system design concept called for oversized exhaust fans and handwheel operated manual throttle valves, PR-13 and PR-17, to control air flow rates and to allow compensation for increasing filter pressure drop as the filters load up with dust, etc. Also, PR-20 was intended to be locally operated using a handwheel. However, in 1970, during an AEC review of the Final Safety Analysis Report (FSAR), it was realized that manual operation of these valves could potentially result in high doses to the operating personnel. Therefore, the AEC required that the valves be remotely operated.

Post accident electrical loads were another point of concern during that stage of review by the AEC, so the assigned Duke Power Design Engineering (DE) personnel decided that pneumatic operators would be appropriate for this purpose. It was initially intended that PR-13, 17 and 20 would fail open upon loss of Instrument Air (IA), thus assuring an open flow path.

At some later time, DE revised the system design such that, at the time of purchase in September, 1970, operators for valves PR-13 and PR-17 were ordered as fail closed but PR-20 was ordered as fail open. However, after initial purchase, the design for PR-20 was also revised to fail shut. Adequate documentation of these decisions has not been found and it is unknown exactly what considerations were taken into account. It is not known if AEC concurrence was sought or obtained. The existing files do include filter manufacturer's data indicating the possibility of filter damage due to overpressure at high flow rates which could occur if the throttle valves failed open. At some point in this process, the FSAR was revised to indicate inaccurate failure positions for PR-13 and PR-17.

On June 12, 1990, one of the NRC Resident Inspectors made a routine inspection of the PRVS and concluded that PR-13 and 17 appeared to be configured as fail close in violation of the FSAR. He contacted Station Instrument and Electrical (I&E) Support Engineers and requested that they investigate.

The I&E personnel verified that the manufacturer's drawings and Duke instrument details showed the valves to fail closed. On June 13, Operations personnel were consulted as to the required failure position for system operability. They concurred that the valves should fail open and initiated a Problem Investigation Report. DE was consulted for an operability statement, based on potential operator action to restore

Instrument Air after a loss of offsite power. However, upon consideration of the non-seismic IA design, the PRVS for all three Oconee units were declared inoperable at 1700 hours, June 13, 1990. At the time Unit 1 was at 97% full power and Units 2 and 3 were at 100% full power. By Technical Specifications, all three units were required to shutdown within 12 hours unless at least one train per unit could be restored to operability.

Temporary Modifications were performed to install travel stops to the valve stems on PR-13 and 17 to prevent valve closure on loss of air. The stops were installed and set to hold the valves open at the throttle position shown by test to provide design flow. The valve controllers were then cycled to the closed position while the fans ran to show that the stops held the valves open as required. As installed, these travel stops permit the valve controllers to open the valves further upon demand, but the valves cannot be closed to restrict flow to less than the design flow rate. These modifications and tests were made during the evening of June 13, with the last PRVS train being formally returned to service at 0141 hours, June 14, 1990, which terminated the event.

DE performed an operability evaluation for the new configuration which states that failure of the valves in either the full open or full closed position may have a detrimental effect on iodine filtration. It further states that, based on operating experience and postulated accident scenarios, valve failure in the as-is position guarantees the 1000 +/- 100 cfm flow rate, as measured and tested every 30 days. This flow rate assures the performance of the filters for the duration of the 2 hour Exclusion Area Boundary accident dose analysis. During this time, filter loading is not expected to be so great as to require the valves to be repositioned to compensate. Therefore, it was concluded that PR-13 and 17 do not have to move after the accident. Additionally, the operability evaluation states that the original evaluation of carbon filter heating to ignition did not include any allowance for heat transfer through the filter housing to the surrounding room air. DE calculated that natural circulation of air within the room will cool the PRVS filters sufficiently to avoid ignition. Therefore, PR-20 also does not require operation following an accident.

An additional aspect of this event is the failure of Duke Power Company to detect this discrepancy sooner, especially in light of specific reviews required by NRC Generic Letter 88-14.

During pre-startup testing, a Loss of Instrument Air test was performed on each unit. This test verified that selected valves went to their failsafe positions but the test did not include PR-13, 17, and/or 20. This was an early opportunity to detect the discrepancy between the FSAR and the actual failure positions.

In 1984, following a Unit 3 trip induced by loss of Instrument Air to several secondary side valves, a review was performed to compare this actual loss of air event to scenarios in emergency procedures and/or operator training. This review referenced a "Loss of Instrument Air" document, dating back to at least 1982, which was being used in the operator training program. This document states that, for Instrument Air pressure dropping from 100 to 70 psig, "PR-13 (PR Fan "A" Inlet Control) closes and PR-17 (PR Fan "B" Inlet Control) closes which prevents operation of the Penetration Room Ventilation System." The original source of the "Loss of Instrument Air" document could not be identified.

This indicates that by 1982, Duke Power personnel recognized that loss of Instrument Air would prevent operation of an Engineered Safeguards system which was required to mitigate the consequences of an accident. The 1984 report included all of the information contained in the training document and was routed to appropriate levels of Duke Power management such as the Oconee Station Manager, the Oconee Superintendent of Operations, and the Manager of Nuclear Safety Assurance in the General Office. However, it should be noted that this specific information was imbedded on page 24 of a 67 page report as part of a long list of components affected by loss of air. No special emphasis was given to highlight this statement.

In March, 1987, Design Study ONDS-0178 was initiated to generate a list of "Active" valves for Oconee. Active valves are defined as those which are required to move to accomplish their safety function. The list was generated by review of valves shown on controlled flow diagrams. The review did not identify PR-13 or PR-17 for inclusion on the list. In April, 1988, the results of this study were distributed, thereby creating the first Oconee Active Valve list. A Valve Cross-Reference List (VCRL) data base was updated to indicate the active valves on this list.

On August 8, 1988, Duke Power received NRC Generic Letter (GL) 88-14, Instrument Air Supply System Problems Affecting Safety-Related Equipment. One portion of this letter required verification that the design of the Instrument Air system met its intended function, including tests to verify proper performance of "air-operated safety-related components." This verification was also to include analysis of component failure positions to assure they were correct to meet required safety functions.

As station personnel reviewed the Active Valve List with respect to existing station valve lists, several discrepancies were observed. Also, station personnel requested that additional data be included. Therefore, on September 12, 1988, a second Design Study, ONDS-0239, was initiated to resolve these discrepancies and generate the desired data. This second study did not use the results of the first study.

By September 28, 1988, Duke Power had applied an interpretation to its other nuclear stations, McGuire and Catawba, that the GL 88-14 verifications would be performed for "active" components only. However, due to differences in design requirements, the definition of "active" at McGuire and Catawba is more comprehensive than at Oconee. Also, their active valve lists were created several years prior to this event, and were well established. A meeting was held at Oconee on October 12, 1988, during which it was confirmed that the Oconee verifications, including testing, would also apply only to active valves.

The assigned DE personnel used the VCRL database to generate a list of valves using the selection criteria "Active" and "air operated." This list did not contain PR-13 and PR-17 but did include PR-20. The computer list was distributed for review and comment.

The instrument details for PR-20 and other valves were specifically reviewed by a qualified engineer in DE as part of the GL 88-14 verification analysis. A January 10, 1989 letter documenting this analysis showed the failure position of PR-20 as OPEN. This is in disagreement with the FSAR and the instrument detail drawings, but was supported by the manufacturer's drawing, which had not been revised when the failure mode was changed after purchase. The engineer subsequently left Duke Power and is not available to explain why he failed to detect the discrepancies among the various documents. On May 8, 1989, the version of the GL 88-14 valve list showing PR-20 to fail open was included as Supplement A in the Oconee GL 88-14 response to the NRC.

As indicated in the May 8 response, actual testing of the active components was not complete. Testing of passive components was not considered due to the management decision limiting the scope of the Oconee response to only active components. Discussions were still ongoing as to which active components were adequately tested by routine periodic tests, which components would require additional special tests, and what the scope of such tests would be. As part of these discussions, a meeting was held at Oconee on May 24, 1989 at which several valves were deleted from the list of affected valves. PR-20 was among the deleted valves but the reason for deletion was not documented. Several attendees stated that, to the best of their recollection, PR-20 was considered not to be an active valve.

Subsequent to the May 24, 1989 meeting, a new computer listing was printed using selection keys of "safety-related" (actually piping code classes considered "safety-related") and "air-operated valves." PR-13 and PR-17 did not appear on that printout.

On June 30, 1989, the results of Design Study ONDS-0239 were released. This new version of the Active Valve List did not include PR-13, PR-17, or PR-20.

On July 20, 1989 a revised response to Generic Letter 88-14 was sent to the NRC, with PR-20 deleted from Supplement A.

As a result of this event, DE performed an additional review of all air operated valves, both active and passive, which complied with the GL 88-14 criteria. This review found a few additional valves which were added to the active valve list, but no additional failure position problems due to improper design were found.

CONCLUSIONS

The root cause of this event is Design Deficiency, due to Deficient Documentation. Design Engineering (DE) personnel revised the Penetration Room Ventilation System (PRVS) such that critical valves could fail shut during a Design Basis Event. Documentation cannot be found to document the basis for the revision, or to document necessary approvals for the revision. They did not assure that the FSAR and the vendor drawing for PR-20 were revised to document the actual configuration of the plant. These errors occurred in 1970; it is expected that improved policies and administrative procedures with increased emphasis on documentation of decisions should limit the probability for occurrences in the future.

Contributing to this event is the fact that a review was directed at this type of discrepancy, and failed to discover it. Generic Letter (GL) 88-14 required, in part, "Verification that the design ... is in accordance with its intended function, including verification by test that air-operated safety-related components will perform as expected ... " and "...an analysis of ...failure positions to verify that they are correct... ."

However, a key management decision was made to limit the GL 88-14 review to only those pneumatically operated components which are required to move to perform their safety function. It was based on the interpretation that the major concern of GL 88-14 was to assure that the Instrument Air system quality was, and would be maintained, adequate to assure proper operation of safety related components.

However, this decision contains the assumptions that the initial positions of passive components are actually the appropriate post accident positions and that these passive components actually fail passively. Verification of these assumptions was a significant part of the scope of GL 88-14. As a result of this interpretation, passive valves, including PR-13 and

PR-17, were omitted from both the design verification and the verification by test. Therefore, a contributing cause of Management Deficiency, Inadequate Policy is assigned.

The decision to remove PR-20 from the GL 88-14 response occurred prior to the DE operability review which concluded that PR-20 does not have to operate after an accident. At the time of the decision, all system descriptions and accident analyses indicated that the accident function of PR-20 was to open after an accident, and therefore met the definition of active valve. Also, it was erroneously concluded that PR-20 fails open, even though available controlled design documents indicated that it fails closed. The reviewer apparently used only one of several documents in his evaluation, and failed to review in sufficient detail to recognize the discrepancies that existed between the documents.

Similarly, two separate design study reviews failed to identify PR-13 and PR-17 as active valves, apparently because the reviews were not performed in sufficient detail to recognize that, in a loss of Instrument Air scenario, these valves would fail closed rather than as-is.

Also contributing to this event is the fact that the potential impact of a loss of Instrument Air on the PRVS was recognized within Duke Power by 1982. This information was transmitted to Management, but in a manner such that the licensing implications were overlooked and no corrective action was taken.

The cause of these contributing deficiencies can be grouped as Inappropriate Action, Lack of Attention to Detail, by management and staff personnel at various levels of authority and in several different organizations within Duke Power.

The following related programs and projects in progress should help prevent reoccurrence of the deficiencies mentioned above.

First, an ongoing project is the Design Basis Document (DBD) program, scheduled for completion in 1995. This is a major review, system by system, to recreate and document the design basis for selected systems and the components in them. This program has already discovered several problems, some of which have been reported as LERs. The PRVS was already on the list of systems to receive a DBD but is not yet specifically scheduled. The detailed analysis required during a DBD should have detected the discrepancy between the actual valve failure position and the failure position listed in the FSAR. Furthermore, the DBD documentation will provide the basis for decisions in future reviews and should eliminate many of the inconsistencies seen in this event.

Additionally, several valve programs have been in progress for some time. These programs are all intended to improve the functional reliability of valves necessary for the safe operation of the plant. These include:

1. The Active Valve List

2. Bulletin 85-03 which includes torque switch testing of Motor Operated Valves.

3. Generic Letter 88-14
   a. Safety-Related Air Operated Valves
   b. Critical to Operation (pneumatic) Valves (adds to preventive maintenance programs those items which can prevent or mitigate a trip or transient)

4. Generic Letter 89-04, guidance on Inservice Test programs, including IWV valve testing.

5. Generic Letter 89-10, Safety-Related Motor Operated Valve Testing

6. Valve related recommendations from the Babcock and Wilcox Owners Group, Safety and Performance Improvement Program

Also, Nuclear Station Modification ON-2267 is being installed to provide an auxiliary Instrument Air system for a limited number of higher importance valves. PR-13, 17, and 20 have not been identified for connection to this backup system.

This event is identified as recurring based on five previous events which also included potential loss of function of safety systems under certain accident scenarios due to design deficiencies:

1. LER 269/88-06 Inadequate Design Analysis of the High Pressure Injection System in the Emergency Core Cooling System Sump Recirculation Mode (Inadequate design documentation)

2. LER 269/88-13 Emergency Backup Power Via Lee Gas Turbines Found to Be Unacceptable in Certain Accident Scenarios due to a Design Deficiency (Failure to adequately assess and document)

3. LER 269/89-06 Single Component Failure Could Render Emergency Power Switching Logic Inoperable Under Certain Design Basis Accident Scenarios (Equipment configuration deficiency)

4. LER 269/90-04 Unanticipated System Interaction During Undervoltage Condition In the 230KV Switchyard Results in Failure to Comply With Technical Specifications (Unanticipated system interaction)

5. LER 269/90-05 Design Deficiency/Unanticipated Interaction of Systems Results in the Potential Closure of the Startup Transformer "E" Breaker on to a Degraded (Low Voltage) Switchyard (Unanticipated system interaction)

All of these listed reports documented instances where the design deficiencies had existed since initial design. Since this report documents discovery of a design deficiency which occurred in 1970, none of the corrective actions from these previous events could have prevented this event.

There were no equipment failures associated with this event, therefore it is not NPRDS reportable. There were no releases of radioactive materials, personnel exposures, or injuries associated with this event. The health and safety of the public were not affected.

CORRECTIVE ACTIONS

Immediate

1. Declared Penetration Room Ventilation System (PRVS) inoperable on all three units, entering 12 hour LCO.

2. Installed and tested Temporary Modifications 742, 743, and 744 to clamp valves in throttled position.

Subsequent

1. Checked McGuire and Catawba criteria for Generic Letter 88-14 response, found them to be based on a similar active valve concept.

2. Revised Operability Evaluation to address operation with travel stops installed and potential failure of PR-20.

3. Design Engineering reviewed all Oconee air-operated valves, both active and passive, in accordance with the requirements of Generic Letter 88-14. This review reverified failure modes versus accident requirements.

4. Operations personnel performed an evaluation of existing procedures to assure that they provide adequate guidance for operation of the PRVS with travel stops in place.

Planned

1. Station Management will define a test program to test additional valves to verify failure positions as required by Generic Letter 88-14.

2. General Office Compliance will revise the Oconee response to Generic Letter 88-14, documenting the results of the Design Engineering review and failure tests.

3. Appropriate station sections will prepare and/or revise necessary procedures for testing and maintenance of the PRVS with travel stops in place.

4. Design Engineering will a perform a design study to determine the appropriate permanent resolution for valves PR-13 and PR-17, and clear temporary modifications 742, 743 and 744.

5. Design Engineering is performing additional reviews for McGuire and Catawba Nuclear Stations. These reviews will verify that the requirements of Generic Letter 88-14 are met.

6. General Office Compliance will coordinate review and revision of Oconee FSAR sections pertaining to PRVS.

SAFETY ANALYSIS

FSAR Section 15.15 discusses the releases for a postulated Maximum Hypothetical Accident (MHA). This scenario assumes that the Emergency Core Cooling Systems (ECCS) fail to prevent major core damage after a LOCA, and that 50 percent of the total core inventory of halogens are released to the Reactor Building (RB). It further assumes that 50 percent of the iodines released to the RB plate out. The RB leak rate is assumed to be 0.25 percent per day, of which half goes into the Penetration Room where it is filtered with 90 percent efficiency by the Penetration Room Ventilation System (PRVS). If both trains of the PRVS become inoperable, this scenario could yield calculated total integrated thyroid doses which exceed the 10CFR100 dose limits.

However, the MHA scenario is not realistic in that the mechanisms for failure of the ECCS are not given. The Design Basis LOCA scenario discussed in FSAR Section 15.14 is more realistic for evaluating the potential effects of an accident, primarily because the postulated fuel damage is lower, with less iodine assumed to enter the RB atmosphere.

The Design Basis LOCA analysis assumes conservative values for the following iodine transport factors:

1. It takes little credit for iodine removed from the RB atmosphere by RB Spray.

2. The Design Basis Reactor Building Leakage rate is assumed to continue for the duration of the 2 hour Site Boundary dose analysis. Actual leak rates, as measured during Integrated Leak Rate Tests, are less than the assumed rates.

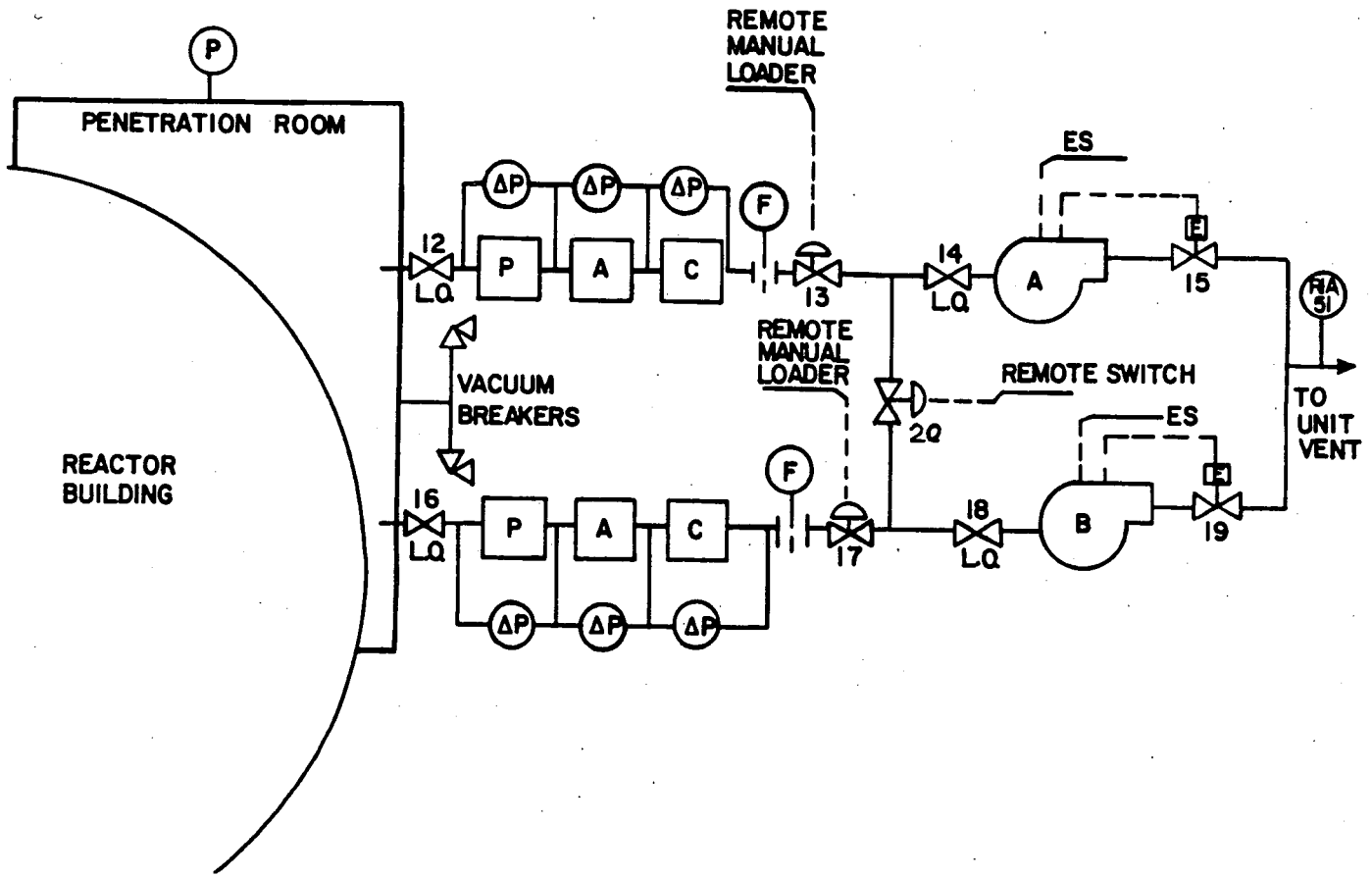
3. The atmospheric dispersion factors are conservative.

4. The amount of fuel damage and percentages of fission products released in gaseous form, especially for Iodine, are conservative.

5. The release is assumed to be instantaneous and does not account for decay of short lived isotopes.

Therefore it is not expected that the 10CFR100 limits would have been exceeded even if a Design Basis LOCA had occurred during this event. There were no releases of radioactive materials, personnel contaminated or overexposed, and the potential inoperability of the Penetration Room Ventilation System (PRVS) had no effect on unit operation. Therefore, the health and safety of the public were not affected by this event.

ATTACHMENT 1



TITLE: PENETRATION ROOM VENTILATION SYSTEM	NOTES: PENETRATION ROOM VENTILATION SYSTEM FLOWPATH	DWG NO: OC-SY-PRV-1 DATE: 1-2-85
		REF: F.S.A.R
		DRAWN BY: DMC/ms APPR BY: RAS
		TRAINING USE ONLY