

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 AUTH. NAME      AUTHOR AFFILIATION  
 DISE, D.P.      Niagara Mohawk Power Corp.  
 RECIP. NAME      RECIPIENT AFFILIATION  
 IPPOLITO, T.A.      Operating Reactors Branch 3

SUBJECT: Supplements 790102 responses to NRC 781127 ltr re fire protection. W/encl schedule for fire protection activities.

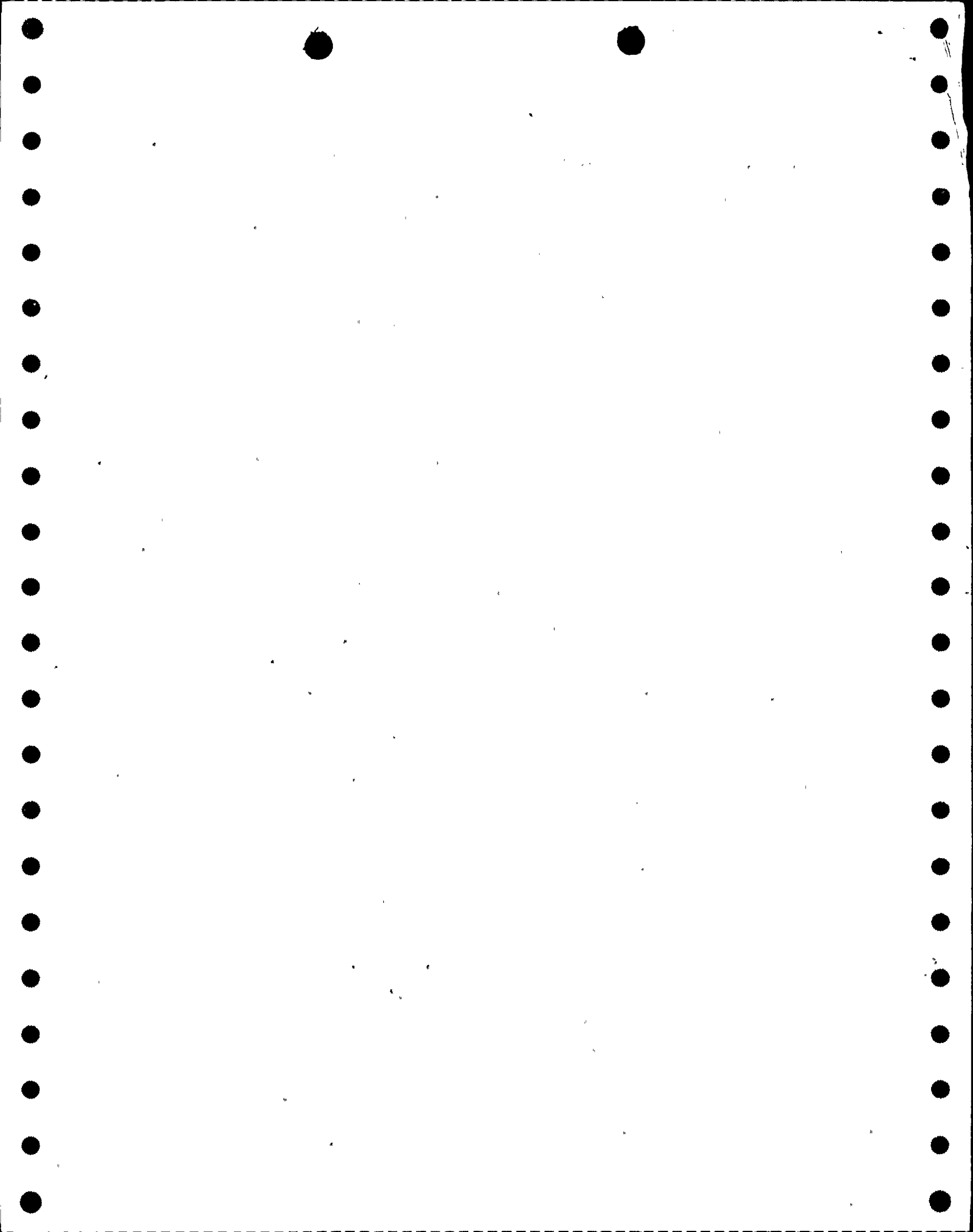
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	09 I&E	2	2	11 TA/EDO	1	1
	12 AUXIL SYS BR	2	2	14 PLANT SYS BR	5	5
	19 WAMBACH	1	1	20 MURANAKA, R	1	1
	21 AD SYS/PROJ	1	1	OELD	1	0
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January 31, 1979

Director of Nuclear Reactor Regulation  
Attn: Mr. Thomas Ippolito, Chief  
Operating Reactors/Branch #3  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Ippolito:

Re: Nine Mile Point Unit 1  
Docket No. 50-220  
DPR-63

On January 2, 1979, we provided a partial response to your November 27, 1978 letter regarding fire protection at Nine Mile Point Unit 1. The enclosed information provides the remaining responses. Those responses that have been modified are indicated by a line in the margin.

A schedule for the major fire protection activities is included. This schedule is based upon Nuclear Regulatory Commission approval by April 1, 1979.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

*Donald P. Dise*

Donald P. Dise  
Vice President-Engineering

NLR/szd

*Hook  
5/11*

7902060213

8. Request:

Provide the present fire resistance rating of all doors in fire barriers. Indicate which doors will be replaced and the fire resistance rating of the replacement doors.

Response:

See the chart provided below.

EXISTING FIRE DOOR RATING

<u>Elevation</u>	<u>Room</u>	<u>Fire Rating</u>	<u>Remarks</u>
250'-0	File Room	A	
250'-0 <sub>1</sub>	File Room	A	
250'-0 <sub>1</sub>	Cable Room	B	To be replaced with "A" label door
250'-0 <sub>1</sub>	Cable Room	B	To be replaced with "A" label door
250'-0	Turb. Gen.	A	
250'-0	Turb. Gen.	A	
250'-0	Record Storage	A	
250'-0	Record Storage	A	
261'-0	Hall	A	
261'-0	Access Cont.	A	
261'-0	Laundry	A	
261'-0 <sub>1</sub>	Shop	A	
261'-0 <sub>1</sub>	Aux. Control	B	Replace with "A" label door
261'-0	Computer Rm.	A	
261'-0	Aux. Control	A	
261'-0	Batt Brd Rm	A	
261'-0	Batt Brd Rm	A	
261'-0	Diesel Gen.	A	
261'-0	Diesel Gen.	A	
261'-0	Diesel Gen.	A	
261'-0	Turb Oil Reservoir	A	
261'-0	Pwr. Rms.	A	
261'-0	Pwr. Rms.	A	
261'-0	Off Gas	B	
261'-0	Off Gas Waste Bldg	B	
261'-0	Waste Building		
	Control Room	B	
261'-0	Waste Building	No Rating	Replace with "B" label door
261'-0	Waste Building	No Rating	Replace with "B" label door
261'-0	Bailing Room	No Rating	Replace with "A" label door
261'-0	Oil Storage	B	
261'-0	Screen Pump Hs	No Rating	Replace with "A" label door
261'-0	Diesel Pump	B	
261'-0	Reactor Building	A	

1. Manufacturer indicates "A" label, although "B" label on the door.
2. Engineering Judgement of Equivalent "B" rating.

8. Response:

Continued.

EXISTING FIRE DOOR RATING

<u>Elevation</u>	<u>Room</u>	<u>Fire Rating</u>	<u>Remarks</u>
277'-0	Hall	A	
277'-0	Store Room	A	
277'-0	Control Room	A	
277'-0	Control Room	A	
277'-0	Control Room	A	
277'-0	Control Room	No Rating	Replace with "A" label door
277'-0 <sub>2</sub>	Control Room	No Rating	Replace with "A" label door
277'-0 <sub>2</sub>	Batt. Rms.	No Rating	
277'-0 <sub>2</sub>	Batt. Rms.	No Rating	
277'-0 <sub>2</sub>	Batt. Rms.	No Rating	
277'-0 <sub>2</sub>	Batt. Rms.	No Rating	
277'-0	Waste Bldg.	B	
277'-0	Waste Bldg.	B	
305'-0	Turbine Lube Oil	A	
340'-0	Reactor Bldg.	A	

10. Request:

Provide information relative to the emergency diesel generator day tank low-low level alarm set point and indicate how a break in the supply or discharge lines would be detected.

Response:

Presently the following level instrumentation, control and alarms are installed on Diesel Generators 102 and 103.

<u>Diesel 102</u>			<u>Diesel 103</u>	
<u>Level (Inches)</u>	<u>Gallons</u>	<u>Function</u>	<u>Level (Inches)</u>	<u>Gallons</u>
11-1/2	172	Backup Pump Start	12-1/8	175
13-1/2	Normal Operating Range	Normal Pump Start	13-1/4	Normal Operating Range
18-1/2		Normal Pump Stop	17-3/4	
19-1/2	335	Backup Pump Stop	19-1/8	365

The fuel oil transfer pumps normally operate in the ranges shown above, only when the Diesels are operating. Pump start is initiated by a low level signal.

If the level further drops to the point where the backup pump signal occurs, an indication at the diesel room and an alarm in the control room is received. If a low level alarm is received, an operator will be dispatched immediately to the Diesel Room(s).

The fuel oil transfer pumps provide 10 gpm to the day tank. All line breaks greater than 7 gpm would be detected by the low level alarm. The diesels only use 3 gpm when operating. If a break of greater than 7 gpm occurred, insufficient oil would be supplied to the day tank. The low level alarm described above would annunciate in the control room. Since fuel oil pump operation is short and since breaks larger than 7 gpm are detected, no further modifications are proposed.

Enclosure No. 3

PF-2

Request:

Upgrade all non-rated fire door frames to frames rated equal to their respective fire doors.

Response:

Niagara Mohawk is evaluating door frame construction in fire barriers. Most door frames in rated fire barriers meet or exceed UL-63 criteria. Those door frames which do not meet UL-63 criteria will be replaced.

PF-31

Request:

Provide supplementary fire training to the leader of the fire brigade, if necessary, beyond that received by the other members of the brigade in accordance with the NFPA codes.

Response:

Additional training for the fire brigade leaders has been re-scheduled. Training will be complete by June 15, 1979.

Enclosure No. 4

PF-3 Request:

Provide at least one hose house for every two fire hydrants, containing equipment essentially duplicating that of present hose carts.

Response:

Niagara Mohawk will install one hose house for every two fire hydrants, essentially duplicating the present equipment.

PF-20 Request:

Identify storage areas on the refueling floor for combustible material. Provide suitable fire-suppression equipment for these areas.

Response:

The northeast corner of the Reactor Building refueling floor will be used for storage. Most combustible materials have been removed. Detection and fire hoses will be used to provide protection for this area. Prior to and during refueling, if combustible materials are required to be stored on this refueling floor, they will be controlled by administrative measures.

PF-21(c) Request:

Verify that the redundant cables located in trays in the #103 diesel generator room are in separate cable trays. Propose suitable modifications if this is not the case.

Response:

The redundant cables in the Diesel Generator Room 103 are located in separate cable trays. Control Cabling of Diesel Generator 102 (North Diesel) is located in conduit in the 261 feet concrete floor and in the tray in Diesel Generator Room 102. Also, the control cabling passes through Diesel Generator Room 103 in tray protected by "Flameastic Coating", a Missile Barrier and a CO<sub>2</sub> total flooding system. Additionally, smoke detection will be provided in the Diesel Generator Rooms.

Control Cabling of Diesel Generator 103 is located in exposed conduit and tray in the area below Diesel Generator 103 (elevation 250 feet).



PF-21(d) Request:

Provide 3-hour rated (minimum) fire barriers between the redundant fuel lines to the diesel generators.

Response:

A 3-hour fire barrier will be provided between the Diesel Generator Rooms at elevation 250 feet. This will separate the redundant fuel lines. Additionally, the cross tie will be removed to prevent a fire in one area from disabling both diesels. A new cross tie will be provided outside of the building.

PF-22 Request:

Enclose hydrogen seal oil unit and associated oil pipes in 3-hour rated (minimum) fire barriers or provide alternate suitable protection.

Response:

The hydrogen seal oil unit and piping will be enclosed if feasible or suitable protection will be provided. Modifications are presently under study. A full response will be provided by June 1, 1979.

PF-25 Request:

Provide the NRC with the flame-spread rating and smoke-development rating of the false ceiling in the control room. Verify that the ceiling material has a flame spread and smoke development rating of 25 or less by the ASTM E-84 test method or replace with a suitable material.

Response:

The presently installed ceiling does not have a flame-spread and smoke development rating of 25 or less by ASTM E-84 test method. Suitable materials will be installed.

PF-26 Request:

Provide suitable fire containment and automatic fire suppression to prevent an oil fire in one feedwater pump from spreading to a redundant feedwater pump.

Response:

A radiant heat shield will be installed to aid in containing postulated fires from spreading from one feedwater pump to another.

PF-28

Request:

Provide an emergency shutdown panel for principal control of equipment with sufficient monitoring information, including emergency condensor and reactor pressure vessel fluid levels, to effect safe shutdown of the reactor considering loss of the control room and loss of offsite power. The effect of a fire in other areas of the plant or redundant safety-related equipment should also be considered in the overall design for control of the safe shutdown system.

Response:

Niagara Mohawk will install a safe shutdown panel to effect safe shutdown considering loss of the control room and loss of offsite power. Monitoring for emergency condensor and reactor pressure vessel level will be included. The effects of a fire in other areas of the plant will be considered for the safe shutdown system.

PF-29

Request:

Provide suitable fire protection (such as automatic sprinklers, fire-protective coating, or fire barriers) for all electrical cabling needed for safe shutdown (to "cold shutdown").

Response:

The design basis for protection of cables required for safe shutdown is described in our January 2, 1979 submittal, Enclosure No. 2, Response No. 4. This design does not provide for fire protection of all safe shutdown cabling. However, our analysis, submitted October 6, 1978 as part of our Response to Question No. 3, of the cabling required for safe shutdown shows that no credible fire will be able to prevent safe shutdown.

Therefore, fire protection for all safe shutdown cabling is not required.

PF-30

Request:

NRC letter dated July 10, 1978 requested Niagara Mohawk to "describe the separation criteria used for the routing of electrical cable" (Question #24). Niagara Mohawk response dated October 6, 1978 stated: "Cables are generally separated functionally" and "...cables are routed to provide sufficient isolation between similar, functionally duplicated devices..." Provide the specifics of your criteria as they relate to the separation criteria defined in BTP 9.5-1, Appendix A and/or the associated criteria defined in Regulatory Guide 1.75. (Of particular interest are your separation criteria for power and control cables.)

Response:

The Nine Mile Point Unit 1 separation criteria are not based upon Regulatory Guide 1.75. However, in most instances cable separation meets or exceeds the guidelines of that document for the Turbine and Reactor Building.

Separation of redundant circuits is achieved in the Turbine Building by routing cables on the East or West side of the building. Further separation is provided by locating trays above or below floor elevation 261 feet. Any one of the following groups of Turbine Building cable trays ensures safe shutdown of the plant.

1. Cable Trays above Elevation 261 feet, or
2. Cable Trays below Elevation 261 feet, or
3. Cable Trays above and below Elevation 261 feet on the East side, or
4. Cable Trays above and below Elevation 261 feet on the West side.

PF-30 Response (Continued):

Separation of redundant circuits in the Reactor Building is achieved by routing cables on the East or the West side of the building. If either the east cable tray or the west cable tray systems are operable, the reactor can be safely shutdown.

As shown on Figures 1A through 8 of the Fire Protection Program (March 1977) appropriate fire barriers and other protective measures will be provided to insure integrity of the cable tray separation system in the event of a fire.

PF-32 Request:

Identify any power cables in the reactor building not previously identified in your FSAR. Verify that they are not routed through cable trays containing safety-related instrument and control cables. If they are routed through such cable trays, indicate how you intend to separate the power cables from the other cables.

Response:

Page 2 of "Additional Information" in the sixth supplement to the Final Safety Analysis Report identified power cables by voltage level. That information is applicable to the Reactor Building separation criteria.

Instrumentation cables are routed separately from all other cables using individual or barriered trays. It is acceptable to route safety-related control cables with low current 600 volt power cables in the same tray.

Every power cable at Unit 1 is sized to meet two requirements. The cable must conservatively carry full load current indefinitely without overheating and must be able to carry maximum available short circuit current well beyond the clearing time of the protective device without damage to the cable. Additionally, all 600 volt power (and 120 volt control cables) have 1000 voltage class insulation. Power cables (600 volt) sized this way, especially low-current power cables, have no more potential for causing a fire hazard than control cables. Therefore, modification of the existing cable routing in the Reactor Building trays is not proposed.

PF-33 Request:

Detail the proposed modification to the HVAC system necessitated by your planned modification to the auxiliary control room - control room interface (which provides a CO<sub>2</sub> seal to the auxiliary control room). Verify that the HVAC system modification meets the requirements of Regulatory Guides 1.78 and 1.95, to the maximum extent that is practical.

PF-33

Response:

The existing ventilation system recirculates 15,300 CFM of air and provides 1000 CFM of new air. This design is not sufficient to evacuate smoke efficiently.

A 100% fresh air input and exhaust will be provided. The following modifications will be made:

1. Addition of new supply and exhaust ducts
2. Smoke exhaust fan
3. Additional dampers

The items above are shown on the attached figure. The new system is designed for emergency use. The system function will be to evacuate smoke during a control room fire. During normal operation the presently installed ventilation system will be used.

The present system has been analyzed and meets Regulatory Guides 1.78 and 1.95. The new system is used when the control room is uninhabitable due to smoke. Therefore, Regulatory Guides 1.78 and 1.95 are not applicable to the new system.

PF-39

Request:

Provide additional sprinkler protection in the container storage bin in the waste disposal area to protect the drums of waste oil stored there.

Response:

The contained storage bin waste disposal area in the Waste Disposal Building on Elevation 261' along the north wall is being removed. Waste oil storage drums will no longer be stored in the station proper.

PF-41

Request:

Verify that a fire in the #102 cable trays in the basement of the turbine building will not disable the #103 power board by shorting the offsite power line to the #103 power board. Propose suitable modifications if this is not the case.

Response:

The offsite power cable for power board #103 is to be re-routed out of the basement area containing power board #102 cables.

# Control Room Ventilating System

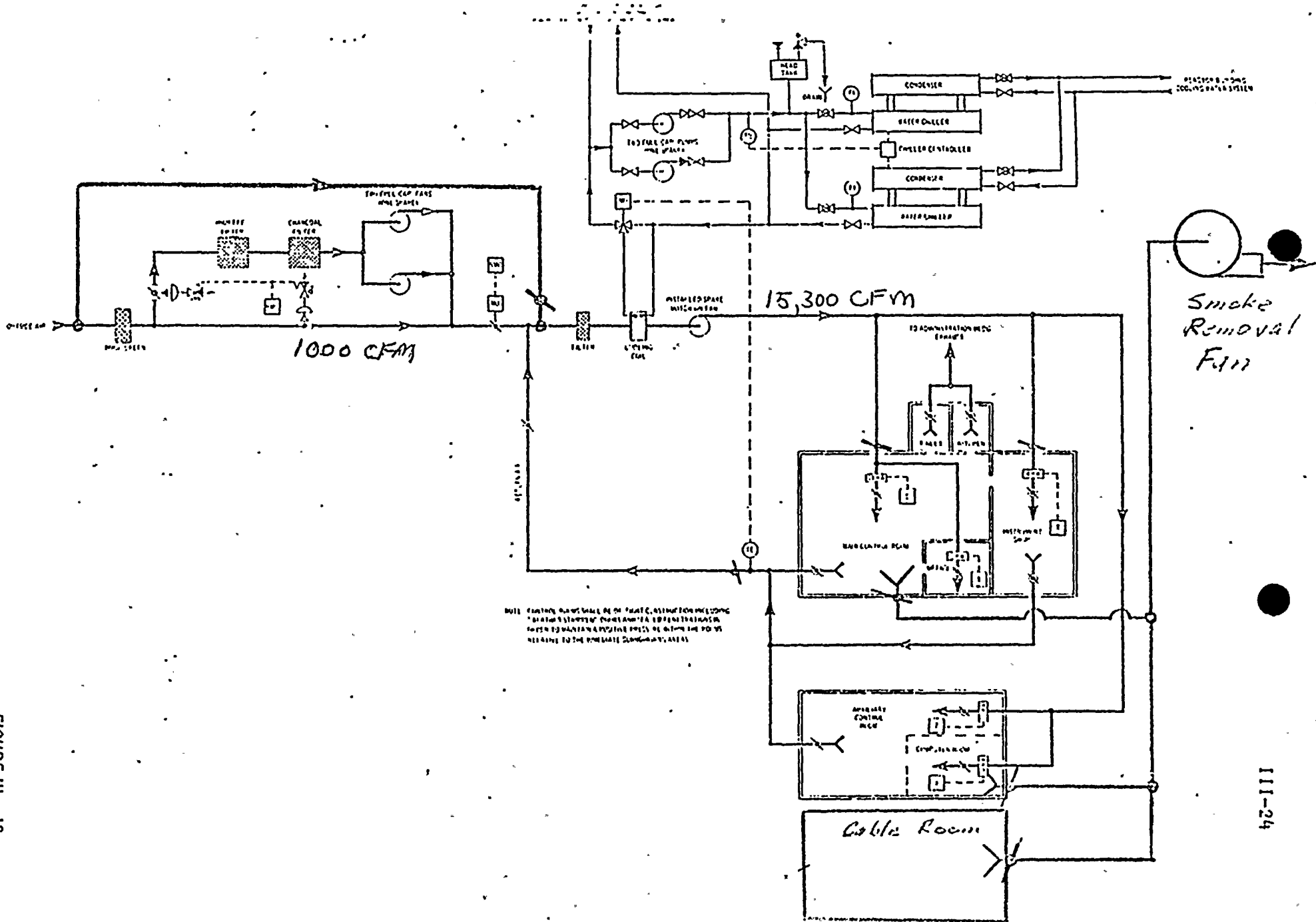
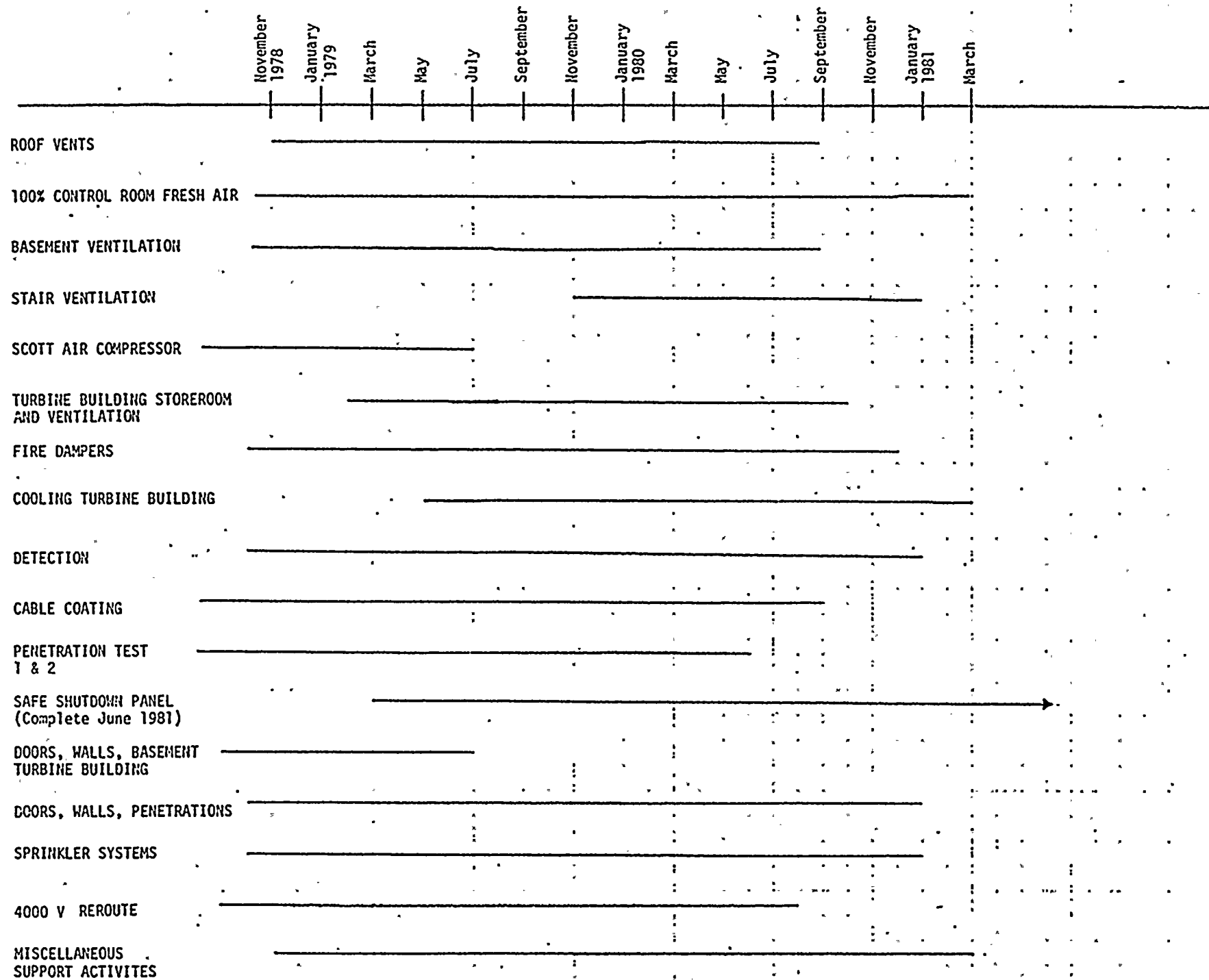


FIGURE III - 12



NINE MILE POINT UNIT 1 FIRE PROTECTION SCHEDULE