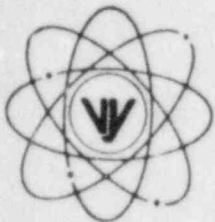


VERMONT YANKEE NUCLEAR POWER CORPORATION



RD 5, Box 169, Ferry Road, Brattleboro, VT 05301

April 24, 1985

FVY 85-38

REPLY TO:

ENGINEERING OFFICE

1671 WORCESTER ROAD
FRAMINGHAM, MASSACHUSETTS 01701
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United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

References:

- (a) License No. DPR-28 (Docket No. 50-271)
- (b) Letter, VYNPC to USNRC, WVY 77-8, dated January 31, 1977
- (c) Letter, USNRC to VYNPC, Amendment No. 43 to Facility Operating License DPR-28, dated January 13, 1978
- (d) Letter, VYNPC to USNRC, FVY 83-92, dated August 16, 1983
- (e) Letter, USNRC to All Licensees and Applicants of Nuclear Power Reactors, Generic Letter 83-33, dated October 19, 1983
- (f) Letter, USNRC to VYNPC, Inspection Report 50-271/83-26, dated November 2, 1983
- (g) Letter, USNRC to All Licensees and Applicants of Nuclear Power Reactors, I&E Information Notice 84-09, dated February 13, 1984
- (h) Letter, VYNPC to USNRC, FVY 84-24, dated March 14, 1984
- (i) Letter, VYNPC to USNRC, FVY 84-49, dated May 21, 1984
- (j) Letter, VYNPC to USNRC, FVY 84-85, dated July 10, 1984
- (k) Letter, VYNPC to USNRC, FVY 84-109, dated September 12, 1984
- (l) Letter, VYNPC to USNRC, FVY 84-137, dated November 26, 1984

Subject: Request for Exemption - 10CFR Part 50, Appendix R, Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979

Dear Sir:

In accordance with the provisions of 10CFR Part 50.12, Vermont Yankee Nuclear Power Corporation hereby requests exemptions from the requirements of 10CFR Part 50, Appendix R. Specifically, we are seeking exemptions from the provisions of Appendix R, Section III.G.2, Fire Protection of Safe Shutdown Capability. Our requests for exemption are provided as Enclosure 1 to this letter.

Vermont Yankee previously filed and received an exemption from the requirement to have suppression installed in the Control Room. Additionally, Vermont Yankee submitted requests for exemption from the requirements of 10CFR50, Appendix R, Section III.G in References (h), (i), and (j), and supplemented this information in Reference (k). The attached exemption requests supercede these additional exemption requests currently pending approval from NRC and include new exemption requests resulting from the

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The attached requests for exemption from the requirements of 10CFR50, Appendix R, Section III.G.2, concern the Reactor Building (Numbers 1 through 8), the Radwaste Building Hallway (Number 9), the Diesel Fuel Oil Transfer Pump Building (Number 10), and the Condensate Storage Tank and Instrument Area (Number 11). As discussed in the Introduction to the exemption requests, Vermont Yankee has considered the Reactor Building (with the exception of the RCIC Room) to be a single fire area separated into seven fire zones. Exemption Requests 1 through 8 specifically address the requirements of Section III.G.2, which impact each of the respective Reactor Building zones.

We trust that our requests are deemed acceptable; however, should you have any questions on this matter, please contact us.

VERMONT YANKEE NUCLEAR POWER CORPORATION

United States Nuclear Regulatory Commission
Document Control Desk

D. M. McCue Notary Public
My Commission Expires February 10, 1987

VERMONT YANKEE EXEMPTION REQUESTS FROM
10CFR50, APPENDIX R

Introduction

The attached Vermont Yankee requests for exemption from 10CFR50, Appendix R, Section III.G.2 supercede the Section III.G.2 exemption requests currently pending approval from NRC and include new requests resulting from the Vermont Yankee Safe Shutdown Capability Analysis Report. This Report, which has been submitted with these exemption requests, provides the supporting technical analysis for the exemption requests. The attached exemption requests concern the Reactor Building (Numbers 1 through 8); the Radwaste Building Hallway (Number 9); the Diesel Fuel Oil Transfer Pump Building (Number 10); and the Condensate Storage Tank and Instrument Area (Number 11).

As discussed in Vermont Yankee's 1977 Fire Hazards Survey, we consider the Reactor Building to be technically one large fire area, separated into zones by floors, walls, and inherent spatial separation. Our subsequent fire protection program was based on this consideration. Numerous modifications and fire protection measures were implemented to insure that a fire in one particular zone of the Reactor Building could not spread to other zones.

The scope of our program is documented in the 1977 Fire Hazards Analysis and also in the NRC's 1978 Fire Protection Safety Evaluation Report which was issued after the NRC's inspection of our overall Fire Protection Program. In addition, we have implemented various procedures to reduce the likelihood of a fire in any area of our facility and have established a five-man fire brigade to further insure that any fire is contained within a local area.

Our compliance to Sections III.G, III.L, and III.O of Appendix R was reviewed as part of the NRC's fire protection inspection. The inspection team concluded that although we do not meet the strict separation criterion of III.G.2;

"A review of the physical layout of redundant trains of equipment in the Reactor Building indicated that an inherent general separation exists due to the trains being located on opposite sides of the primary containment. The combustible loading throughout the building appeared low overall, and the general layout of equipment is such that the building is not congested, and typically has numerous areas on each elevation where little or no combustible material is present. The team concluded that, although, the Licensee had failed to provide the specific fire protection features required by Appendix R, Section III.G, the general configuration of equipment within the Reactor Building tends to minimize the net safety effect of the lack of the specific protection required by the Rule."

We believe that the fire protection modifications and measures implemented to date, coupled with the additional modifications being proposed for specific zones within the Reactor Building (as detailed in the Safe Shutdown Capability Analysis Report), meet the intent of Section III.G.2 separation criteria and provide protection equivalent to that provided by the establishment of

physically bounded fire zones within the Reactor Building. The current concept divides the building outside the RCIC Room into seven fire zones divided by separation zones and the building floors.

Given the existing Reactor Building configuration, any local fire will be contained within a small area by the actuation of fire suppression systems or the lack of intervening combustibles necessary to support the spread of the fire throughout any single elevation or from one elevation to another. In addition, manual hose stations and numerous fire extinguishers are available throughout the Reactor Building.

1. Reactor Building, Torus Area

Vermont Yankee requests exemption from the requirements of Section III.G.2 of Appendix R for the Reactor Building torus area. Section III.G.2.b defines a possible means of compliance to III.G.2 as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

The torus area of the Reactor Building contains power and control cables for redundant safe shutdown equipment necessary to achieve and maintain hot shutdown. Although redundant equipment is separated by a horizontal distance of at least 20 feet with no intervening combustibles or fire hazard, the requirement for an automatic fire suppression system is not met. Exemption is requested from the specific requirement of Section III.G.2 in that the provisions of III.G.2.b are met with the exception that an automatic fire suppression system is not installed in the fire area.

As shown in the attached Figures 2, 3, 6, 7, 10, and 11, the torus area is comprised of Zones RB-1 and RB-2. The Torus Area is a large octagonal area, 140 feet across with a very low in situ combustible loading. The ceiling is approximately 37 feet high. The Primary Containment and the torus itself fill a large volume of the area and preclude a fire from moving across the area. Fire protection modifications to this area will include fire stopping the cable trays to create a 20' separation zone in the NW quadrant and providing the dc power feed from the alternate shutdown battery with a 3-hour fire barrier. In addition, this area is equipped with numerous smoke detectors and fire extinguishers and manual hose stations are also available. Although transient combustibles (in the form of clothing, plastic, and wood) could be present in the torus area to support maintenance activities, such combustibles will not be admitted unless an evaluation of the area is performed and appropriate compensatory fire protection measures are instituted. These compensatory measures could include one or more of the following actions: (1) control of the maximum amount of clothing and plastic allowed into the area; (2) additional fire extinguishers; (3) use of noncombustible storage bins; (4) a continuous fire watch in the area, and/or (5) rapid fire brigade response.

We believe the inherent separation within this area, coupled with the very low in situ combustible loadings, fire protection modifications to be installed, and existing fire protection measures, insure that a fire in one particular section of the torus area will not progress to other sections. The justification for the request for exemption is that equivalent protection is provided as the combustible loading is very low or nonexistent and there is a low probability of fire due to the absence of ignition sources.

Based on the above, we believe that the public health and safety will be protected in a fashion equivalent to that resulting from literal compliance with the specific technical requirement of Section III.G.2.b for installation of automatic fire suppression throughout the torus area. Therefore, we request an exemption from the specific requirements of Section III.G.2 of Appendix R for this area.

2. RCIC Room Fire Area

Vermont Yankee requests exemption from the requirements of Section III.G.2 of Appendix R to 10CFR, Part 50, for the RCIC Room fire area. Section III.G.2.c defines a possible means of compliance as follows:

"Enclosure of cable and equipment and associated nonsafety circuits of one redundant train in a fire barrier having a one-hour rating. In addition, fire detection and an automatic fire suppression system shall be installed in the fire area."

As shown in attached Figures 1, 2, 6, and 10, the RCIC Room contains the RCIC system and alternate shutdown panel, and is located in the northwest corner of the Reactor Building structure at Elevation 213'. The walls, floors, ceiling, and penetration seals of the RCIC Room form fire barriers creating a separate fire area. As shown in attached Figures 2, 6, and 10, the RCIC area contains Division II shutdown cable. As shown in attached Figures 3, 7, and 11, the area directly above the RCIC Room is the northwest section of Zone RB-1 (Elevation 232') which contains Division I and II shutdown cable. Detection is installed in the RCIC Room, and suppression and detection exist in the room above Elevation 232'. The detection in the RCIC Room initiates the sprinkler system in the room above. The steel plate stairway enclosure separating the RCIC Room from the room at Elevation 232' is not fire rated. The steel security door to the Torus Area is not fire rated, and no suppression is installed in the RCIC Room. Exemption is requested from the requirements of Section III.G.2 in that the provisions of Section III.G.2.c are met with the exception that the requirements to have redundant trains of equipment separated by a one-hour fire barrier, and to have suppression installed are not met in the RCIC Room fire area.

The steel plate stairway enclosure separating the RCIC Room from the room above at Elevation 232', although not fire rated, was designed to contain steam from a high energy line break in the RCIC Room and prevent it from reaching the room at Elevation 232'. Vermont Yankee believes that the existing stairway enclosure barrier, in conjunction with the detection and suppression configuration, provides equivalent fire barrier protection between the RCIC Room and the area at Elevation 232'. The security door to the Torus Area is manufactured of heavy steel plate. The door opening is situated with essentially no combustibles in the vicinity of either side. Vermont Yankee believes that the door area provides equivalent fire barrier protection between the RCIC Room and the Torus Area.

The Elevation 232' detection and suppression equipment, coupled with the low combustible loading for the RCIC Area (consisting of the small amount of lube oil in the RCIC pump turbine set) insures that protection is equivalent to that required by the regulation.

Based on the above, we believe that the public health and safety is protected in a fashion equivalent to that resulting from literal compliance with the technical requirements of Section III.G.2.c of Appendix R to the have automatic suppression installed, and for one redundant train of equipment in a fire barrier to have a one-hour rating. Therefore, we request an exemption from the specific requirements of III.G.2 of Appendix R for this area.

3. Reactor Building, Northwest Corner Room, Elevation 232'

Vermont Yankee requests exemption from the requirements of Section III.G.2. of Appendix R to 10CFR, Part 50 for the northwest corner room of the Reactor Building at Elevation 232'. Section III.G.2.b specifically defines a possible means of compliance to III.G.2 as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

The Northwest Corner Room of the Reactor Building at the 232' elevation contains power cables for redundant safety equipment systems necessary to achieve and maintain hot shutdown. Although fire detection and automatic water suppression are installed in the area and there are no intervening combustible or fire hazards between the cables; the cables are not separated by a horizontal distance of more than 20 feet throughout the entire area. Exemption is requested from the specific requirements of Section III.G.2 in that the provisions of III.G.2.b are met with the exception that redundant trains of cables and equipment are not separated by a horizontal distance of more than 20 feet.

As shown in the attached Figures (3, 7, and 11), this area is considered part of Zone RB-1. The power cables enter the room in heavy wall conduit six feet from the ceiling with a separation of approximately three feet. These conduits then quickly diverge. When the conduits are approximately 26 feet from each other, the cables enter tray and then exit the Corner Room with a separation of approximately 30 feet. The cables supply power to the Core Spray Pumps A and B, RHR Pumps A through D, and RHR Service Water Pumps A through D. As discussed in the Safe Shutdown Capability Analysis Report (attached), one RHR and one RHR service water pump are needed for hot and cold shutdown. A heavy steel plate structure encloses the stairway to the lower level. Floor penetrations are also sealed. This arrangement is designed to prevent steam from an HELB in the RCIC area from reaching the 232 level.

This Corner Room is a restricted area. Controlled access from above is through a locked steel structure; and from below via the torus, through a locked, louvered steel door. Although transient combustibles (in the form of clothing, plastic, and wood) could be present in the area to support maintenance activities, such combustibles will not be admitted unless an evaluation of the area is performed and appropriate compensatory fire protection measures are instituted. These compensatory measures could include one or more of the following actions: (1) control of the maximum amount of clothing and plastic allowed into the area; (2) additional fire extinguishers; (3) use of noncombustible storage bins; (4) a continuous fire watch in the area; and/or, (5) rapid fire brigade response.

Fire protection is provided by an area pre-action water suppression system activated by the area fire detection system.

Based on the above, we believe that the limited access to the area, the low in situ combustible loading, the detection system, the absence of intervening combustibles, and the pre-action water suppression system will provide protection for the public health and safety in a fashion equivalent to that resulting from literal compliance with the specific technical requirements of Section III.G.2.b of Appendix R for 20-foot horizontal separation with no intervening combustible or fire hazards. Therefore, we request an exemption from the specific requirements of Section III.G.2 of Appendix R for this Corner Room.

4. Reactor Building, Northeast and Southeast Corner Rooms

Vermont Yankee requests exemptions from the requirements of Section III.G.2 of Appendix R for both the Northeast and Southeast Corner Rooms. Section III.G.2.b defines a possible means of compliance to III.G.2 as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

The Northeast and Southeast Corner Rooms each contain a core spray pump, two RHR pumps, two RHR service water pumps, associated piping, valves and cable. The Corner Rooms are triangular in shape and run from Elevation 252' down to Elevation 213'. As shown in attached Figures 2, 3, 4, 6, 7, and 8, the Northeast Corner Room is considered part of Zone RB-1 and the Southeast Corner Room is considered part of Zone RB-2. Although redundant trains of equipment are separated by a horizontal distance of more than 20 feet with no intervening combustibles, an automatic fire suppression system is not provided within the Corner Rooms. Further, automatic fire detection and suppression system is not provided between the stairs at Elevation 252' and the Corner Room areas. Exemption is requested from the specific requirements of Section III.G.2 in that the provisions of III.G.2.b are met with the exception that automatic suppression is not provided in the Corner Rooms and detection and suppression is not installed between the stairs at Elevation 252' and the Corner Room areas.

There are no intervening combustibles between these two Corner Rooms at either Elevation 252' or in the torus area. In addition, fire detection is provided in each Corner Room as well as in the torus area. Manual hose stations and fire extinguishers are also available throughout this area. Although transient combustibles (in the form of clothing, plastic, and wood) could be present in these areas to support maintenance activities, such combustibles will not be admitted unless an evaluation of the area is performed and appropriate compensatory fire protection measures are instituted. These compensatory measures could include one or more of the following actions: (1) control of the maximum amount of clothing and plastic allowed into the area; (2) additional fire extinguishers; (3) use of noncombustible storage bins; (4) a continuous fire watch in the area; and/or (5) rapid fire brigade response.

Based upon the above, we believe that the existing separation within the Reactor Building and the absence of intervening in situ combustibles provide protection for the public health and safety in a fashion equivalent to that resulting from literal compliance with the specific technical requirements of Section III.G.2.b to Appendix R for automatic suppression in the Corner Rooms and installed detection and automatic fire suppression between the stairs at Elevation 252' and the Corner Room areas. Therefore, we request an exemption from the specific requirements of Section III.G.2.b of Appendix R for these Corner Rooms.

5. Reactor Building, Elevation 252', Northeast Corner, Vital MCCs

Vermont Yankee requests an exemption from the requirements of Section III.G.2 of Appendix R for the northeast corner of Elevation 252' of the Reactor Building, in the vicinity of vital MCCs. Section III.G.2.b defines as possible means of compliance to III.G.2 as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

As shown in attached Figures 4, 8, and 12, Elevation 252' of the Reactor Building is divided into Zone RB-3 (north side) and RB-4 (south side). Zone RB-3 contains MCC 9D and 89A as well as cables in trays. Zone RB-4 contains MCC 89B as well as cables in trays. There are no other cable trays located between the MCCs.

These MCCs contain control and power feeds for redundant AC motor-operated valves, some of which are located inside the inerted containment. There is approximately an 18-foot separation between the vital MCCs in question. There are two cable trays approximately 18 feet off the floor which run over MCCs 9D and 89A, and extend six feet toward MCC 89B. There are other cables installed in conduit in this overhead region. There are no other in situ combustibles either at the floor elevation or in the overhead region as addressed in the Fire Hazard Survey submitted on January 31, 1977. Exemption is requested from the specific requirements of Section III.G.2 in that the provisions of III.G.2.b to have redundant trains of equipment separated by a horizontal distance of 20 feet with no intervening fire hazards or combustibles, as well as for fire detection and an automatic suppression system to be installed in the area are not met.

A radiant heat shield has been installed between MCC 89A and 89B. This shield extends up approximately 14 feet and four feet out from the wall. To further decrease the probability of a fire damaging both MCCs at the same time, we intend to install the following modifications.

(1) Approved fire stops in all conduits that span the separation zone between the subject MCCs. These stops will be installed in those conduits which accept cables from the two cable trays that run part of the way between the MCCs. In addition, any other conduit that shares a common enclosure away from this area will also be fire stopped. (2) Fire stops in all the cable trays that cross from Zone RB-3 to RB-4. This creates a separation zone between RB-3 and RB-4.

The radiant heat shield, conduit fire stops, and proposed cable tray fire stops serve to separate the vital equipment. Further, essentially no in situ combustibles are located in the area. In addition, manual hose stations and extinguishers are available in the area. If a fire does start in one MCC, the shield will prevent the radiant heat from reaching the second MCC.

Although transient combustibles (in the form of clothing, plastic, and wood) could be present in this area to support maintenance activities, such combustibles will not be admitted unless an evaluation of the area is performed and appropriate compensatory fire protection measures are instituted. These compensatory measures could include one or more of the following actions: (1) control of the maximum amount of clothing and plastic allowed into the area; (2) additional fire extinguishers; (3) use of noncombustible storage bins; (4) a continuous fire watch in the area; and/or, (5) rapid fire brigade response.

Based on the modifications discussed above, coupled with lack of combustibles and existing fire protection features located in this area, we believe a fire in this area will not prevent the plant from achieving safe shutdown. In addition, we believe these measures provide protection for the public health and safety in a fashion equivalent to that resulting from literal compliance with the specific technical requirements of Section III.G.2.b of Appendix R to have redundant trains of equipment separated by a horizontal distance of 20 feet with no intervening combustibles or fire hazards, and to have fire detection and automatic fire suppression installed in the area. Therefore, we request an exemption from the specific requirements of Section III.G.2.b of Appendix R for this area.

6. Reactor Building, Elevation 252', Northwest Corner

Vermont Yankee requests an exemption from the requirements of Section III.G.2 of Appendix R for the northwest corner, ground floor, Elevation 252', of the Reactor Building. Section III.G.2.b defines a possible means of compliance to III.G.2 as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

The northwest corner of the Reactor Building contains Division II ADS, RHR controls and instruments, and Division I HPCI and valve cables. Although fire detection and automatic water suppression are installed in the area, the exposed Division I and Division II cables are separated by only 18 feet at the closest point. Exemption is requested from the specific requirements of Section III.G.2 in that the provisions of III.G.2.b are met with the exception that redundant trains of cables and equipment are not separated by a horizontal distance of more than 20 feet.

As shown in the attached Figures 4, 8, and 12 this area is considered to be a part of Zone RB-3. Suppression extends through the location and extends out to the Traveling Incore Probe (TIP) room to create a separation zone as shown in the figures, reaching to the steam tunnel wall.

Control and instrumentation cables associated with both trains and selected power cables are routed from the Control Building into the Reactor Building through the northwest corner at Elevation 252'. The fire loading near these cable trays is very low, with no intervening combustibles. The two exposed cable tray systems are separated by 18 feet and then diverge further; smoke detection has been provided in the area, and a pre-action automatic sprinkler system is installed beneath the lowest level of cable tray, and above the top level of trays. The sprinkler system will promptly suppress any fire in this area and insure that redundant safety systems are preserved. Although transient combustibles (in the form of clothing, plastic, and wood) could be present in this area of the Reactor Building to support maintenance activities, such combustibles will not be admitted unless an evaluation of the area is performed and appropriate compensatory fire protection measures are instituted. These compensatory measures could include one or more of the following actions: (1) control of the maximum amount of clothing and plastic allowed into the area; (2) additional fire extinguishers; (3) use of noncombustible storage bins; (4) a continuous fire watch in the area; and/or, (5) rapid fire brigade response.

Based on the above, we believe that this design will preclude a fire in this area, as well as one in other parts of the Reactor Building, from preventing the plant reaching hot shutdown and will provide protection for the public health and safety in a fashion equivalent to that resulting from literal compliance with the specific technical

requirements of Section III.G.2.b of Appendix R to have redundant trains of equipment separated by a horizontal distance of 20 feet with no intervening combustibles or fire hazards. Therefore, we request an exemption from the specific requirements of Section III.G.2.b of Appendix R for this area.

7. Reactor Building, Elevation 280', East Side, Instrument Racks

Vermont Yankee requests an exemption from the requirements of Section III.G.2 of Appendix R for the east side of the Reactor Building, Elevation 280', by Instrument Rack 25-6. Section III.G.2.b defines a possible means of compliance as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

This area contains Division I and Division II electrical equipment. Instrument racks on Elevation 280' provide reactor level and pressure instrumentation. The instrument racks are separated by approximately 30 feet. Fire detectors and an automatic fire suppression system are not installed in the fire area. Exemption is requested from the specific requirements of III.G.2 in that the provisions of III.G.2.b to have fire detectors and an automatic fire suppression system installed in the fire area are not met.

As shown in attached Figures 5, 9, and 13, this area is considered the east side separation between Zones RB-5 and RB-6. This separation zone of no intervening combustibles will be created by fire-stopping cable trays and conduit that cross the separation zone. The separation zone will extend from the concrete shield wall to the edge of the berm around the Motor Generator (MG) sets.

The relative proximity of the racks on Elevation 280' to the Recirculation MG set area was addressed in the Fire Hazard Survey submitted in January 1977 and in the NRC's Safety Evaluation Report, dated January 1978. As a result of this evaluation, smoke and thermal detection was installed over the nearby MG sets, the berm around the MG set was raised and an automatic foam suppression system was installed. Manual hose stations and fire extinguishers are also provided in the area. The MG set area is covered by detection and an automatic foam system.

Although transient combustibles (in the form of clothing, plastic, and wood) could be present in the Zone RB-5 area to support maintenance activities, such combustibles will not be admitted unless an evaluation of the area is performed and appropriate compensatory fire protection measures are instituted. These compensatory measures could include one or more of the following actions: (1) control of the maximum amount of clothing and plastic allowed into the area; (2) additional fire extinguishers; (3) use of noncombustible storage bins; (4) a continuous fire watch in the area; and/or, (5) rapid fire brigade response.

Based upon the above, we believe that the fire protection measures presently installed and being implemented in the vicinity of these instrument racks, provide protection for the public health and safety in

a fashion equivalent to that resulting from literal compliance with the specific technical requirements of Section III.G.2.b of Appendix R to have detection and automatic suppression installed between redundant trains of equipment separated by a horizontal distance of 20 feet with no intervening combustibles or fire hazards. Therefore, we request an exemption from the requirements of III.G.2.b of Appendix R for this area.

8. Reactor Building, Elevation 280' West

Vermont Yankee requests exemption from the requirements of Section III.G.2 of Appendix R to 10CFR, Part 50, for the west side of the Reactor Building at Elevation 280'. Section III.G.2.b defines a possible means of compliance as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

The west side of the Reactor Building at Elevation 280' contains cable which crosses the separation zone between Zone RB-5 and Zone RB-6. Although these cable trays will be provided with fire stops where they cross the separation zone; detection and suppression is not provided in the area. Exemption is requested from the specific requirements of Section III.G.2 in that the provisions of III.G.2.c are met with the exception that fire detection and automatic fire suppression are not provided in this area.

As shown in the attached figures (5, 9, and 13), the west side of the Reactor Building at this elevation includes the separation zone between Zones RB-5 and RB-6. Cables associated with Division II equipment run in tray from Zone RB-5 through the separation zone into Zone RB-6. These cable trays will be provided with one-hour fire stops where they cross the separation zone. Additionally, the floor area is closed off by a locked wire fence at the north end. The south end is blocked by a 7-foot high concrete wall whose purpose is to shield the Standby Gas Treatment System. Further, this area has (1) low combustible loading; (2) a great distance above the floor where the trays are located; and (3) detectors under the building roof above Elevation 345' which will detect a fire in this area through the open refueling bay.

Based on the above, we believe that the public health and safety is protected in a fashion equivalent to that resulting from literal compliance with the requirements of Section III.G.2.b to have fire detection and automatic suppression installed in the area. Therefore, we request an exemption from the specific requirements of Section III.G.2 of Appendix R for this area.

9. Power Cables in Turbine Building - Radwaste Building Hallway

Vermont Yankee requests an exemption from the requirements of Section III.G.2 for the personnel corridor, adjacent to the north wall of the Reactor Building, which connects the Turbine Building and Radwaste Building. Section III.G.2.c defines a possible means of compliance to III.G.2 as follows:

"Enclosure of cable and equipment and associated nonsafety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

Redundant power cables in conduit pass through the corridor, separated by approximately 19 feet. These cables supply power to the Divisions I and II Motor Control Centers in the Reactor Building. There is no detection or automatic suppression in this area. Exemption is requested from the specific requirements of Section III.G.2 in that the provisions of Section III.G.2.c are met with the exception that fire detection and automatic suppression are not installed in this area.

As shown in attached Figure 1, this hallway is considered as a separate fire area (Area 13). In this area, both sets of conduits have been wrapped with a qualified 1-hour fire wrap. In addition, manual hose stations are available, and there are no in situ combustibles in the corridor. Based on the above, we believe that wrapping both conduits, the lack of in situ combustibles during operation, the availability of manual hose stations, and the 19-foot separation provides protection for the public health and safety in a fashion equivalent to that resulting from literal compliance with the specific technical requirements of Section III.G.2.c of Appendix R. Therefore, we request an exemption for Section III.G.2 for this area.

10. Diesel Fuel Oil Transfer Pump Building

Vermont Yankee requests exemption from the requirements of Section III.G.2 of Appendix R to 10CFR, Part 50, for the Diesel Fuel Oil Transfer Pump Building. Section III.G.2.b defines as possible means of compliance as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

As shown in attached Figure 1, the Diesel Fuel Oil Pump Building is a separate fire area (Area 12) of concrete construction, enclosed by a dike around the diesel oil storage tank. A fire in this building could disable both pumps. Although this building does have installed automatic fire detection; the two pumps are not separated by more than 20 feet and no automatic fire suppression is installed. Exemption is requested from the requirements in Section III.G.2 in that the provisions of III.G.2.b are met with the exception that this redundant equipment is not separated by a horizontal distance of more than 20 feet and automatic suppression is not installed in the area.

The two fuel oil transfer pumps transfer fuel oil from the large storage tank to the engine day tanks. The justification for this exemption is the low probability of a fire and even lower probability of a fire that would disable both pumps. If both pumps were disabled, the diesels could operate for about 8 hours each, then a tank truck could top off the day tanks, without the need for these pumps. Additionally, all electrical devices are of the explosion-proof type and a manual fire extinguisher is provided outside the door. Automatic fire detection is installed in the building. Due to the remote location of the building, the lack of combustible material, the detection, the absence of ignition sources, and the fact that maintenance and housekeeping do not allow accumulation of leaking fuel oil, the probability of a fire is very low.

Based on the above, we believe that the public health and safety is protected in a fashion equivalent to that resulting from literal compliance with the technical requirements of Section III.G.2.b of Appendix R in this area. Therefore, we request an exemption from the specific requirements of Section III.G.2 of Appendix R for this area.

11. Condensate Storage Tank and Instrument Area

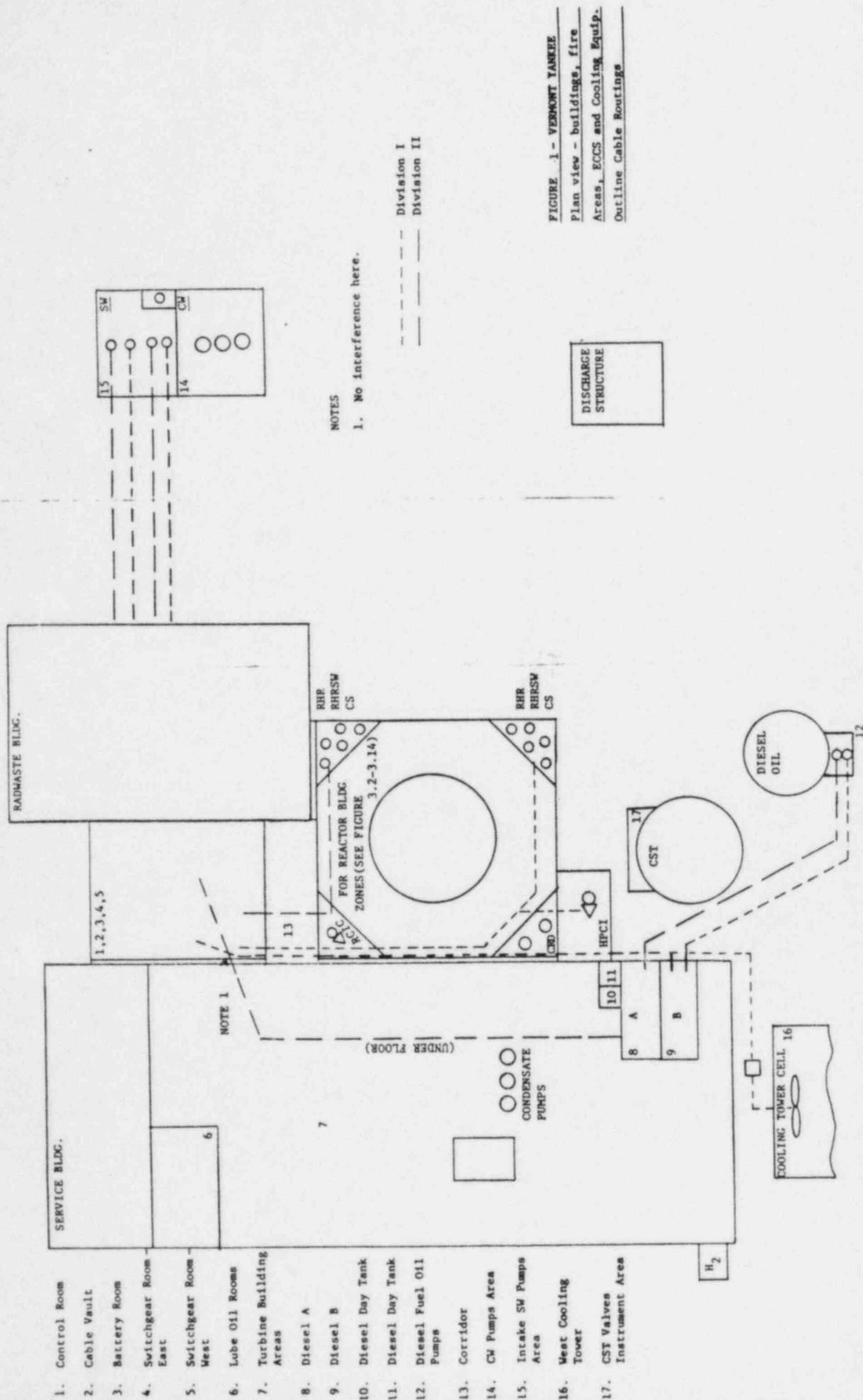
Vermont Yankee requests exemption from the requirements of Section III.G.2 of Appendix R to 10CFR, Part 50, for the condensate storage tank and instrument area. Section III.G.2.b defines a possible means of compliance to III.G.2 as follows:

"Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

This area (shown as Fire Area 17 in the attached Figure 1) is located outdoors, adjacent to the tank and south of the Reactor Building. This area contains two sets of CST level instruments separated by 16 feet with no intervening combustibles or ignition sources; however, fire detectors and an automatic fire suppression system are not installed. Exemption is requested from the specific requirements of Section III.G.2 in that the provisions of III.G.2.b to have redundant trains of cables and equipment separated by a horizontal distance of more than 20 feet, and to have fire detectors and an automatic fire suppression system installed in the fire area are not met.

This isolated, locked, enclosed area contains two sets of CST level instruments separated by 16 feet, with no intervening combustibles or ignition sources. The area also includes manual valves and tank steam heating controls. Cables are enclosed in conduits and boxes. In addition, if a fire disabled both sets of CST level instruments, the water in the tank is still available. Further, the torus would not be affected by a fire at this location and its water is available to hot and cold shutdown systems.

Based on the above, we believe that the public health and safety is protected in a fashion equivalent to that resulting from literal compliance with the technical requirements of Section III.G.2.b of Appendix R for this area. Therefore, we request an exemption from the specific requirements of Section III.G.2 of Appendix R for this area.



FIRE AREA
BARRIER

NOTES:

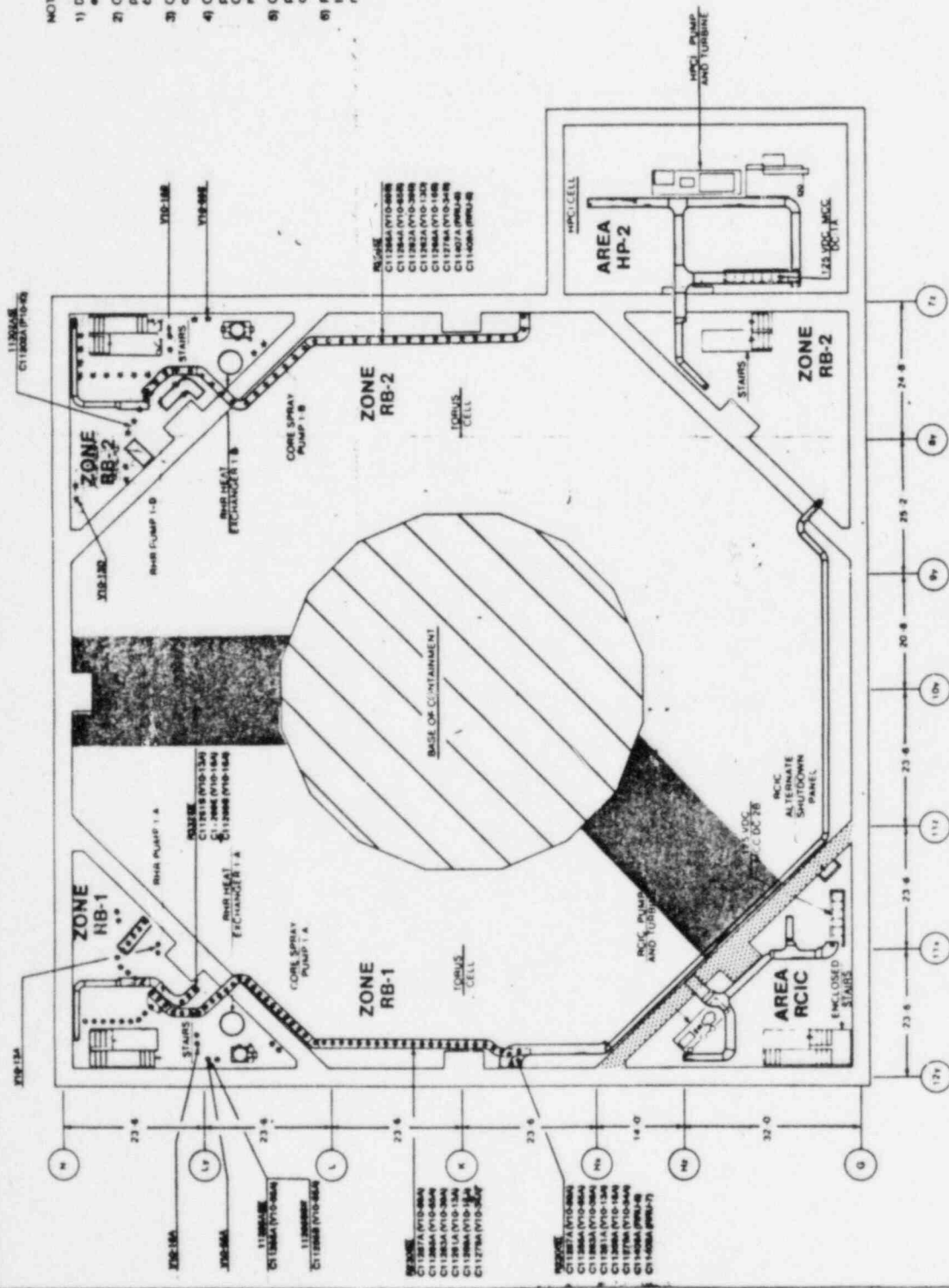
- 1) Drawing shows routing of cables associated with minimum equipment required for hot and cold shutdown.
- 2) Only cable no. C11269C is shown routed for V10-183 because postulated fire damage to cable nos. C11269A and C11269B could not spuriously open this normally closed valve.
- 3) Cables associated with valves V10-17 and V10-18 are used only for cold shutdown.
- 4) Only cable no. C11312C is shown routed for V10-57 because postulated fire damage to cable nos. C11312B, C11312A, C11312F and C11312G could not spuriously open this normally closed valve.
- 5) Only cable no. C11313B is shown routed for V10-68 because postulated fire damage to cable nos. C11313A and C11313C could not spuriously open this valve.
- 6) Raceways containing safe shutdown cables that are routed through separation zones will be provided with one hour barriers where they are located inside separation zones.

REFERENCE DRAWINGS:

- G191148 REV. 9
- G191329 REV. 11
- G191330 REV. 13
- G191331 REV. 10

- LEGEND:
- REACTOR BUILDING FIRE BARRIER, 3-HR RATING
 - RHR, RHR SW (DIV. II)
 - RHR, RHR SW (DIV. II)
 - SEPARATION ZONE
 - CONTAINMENT

REV	DATE	DESCRIPTION	BY	CHKD
1	08/15/88	REVISED FOR RHR	W. J. BART	
VERMONT YANKEE NUCLEAR POWER CORPORATION VERMONT YANKEE NUCLEAR POWER STATION				
REACTOR BUILDING RACEWAYS AND MAJOR EQUIPMENT FOR DIV. I VS. DIV. II OF RHR, RHR SERVICE WATER, AND SERVICE WATER				
Engineering Planning and Management, Inc.				FIGURE NO. 2
Three Square Street, Farmington, ME				



ELEVATION 213'-9"

NOTES

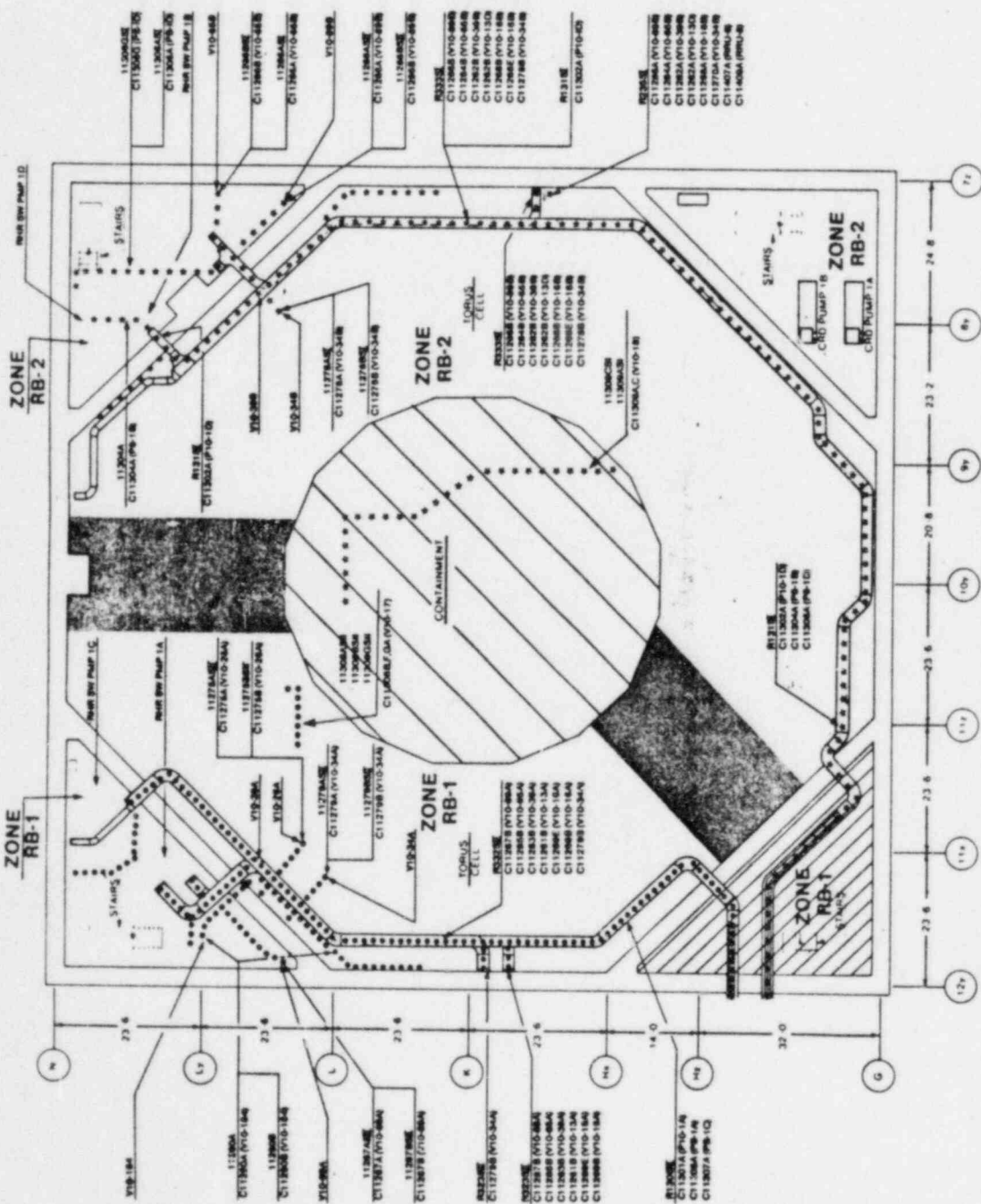
- 1) Drawing shows routing of cables associated with minimum equipment required for hot and cold shutdown.
- 2) Only cable no. C11289C is shown routed for V10-183 because postulated fire damage to cable nos. C11289A and C11289B could not spuriously open this normally closed valve.
- 3) Cables associated with valves V10-17 and V10-18 are used only for cold shutdown.
- 4) Only cable no. C11312C is shown routed for V10-87 because postulated fire damage to cable nos. C11312B, C11312A, C11312F and C11312G could not spuriously open this normally closed valve.
- 5) Only cable no. C11313B is shown routed for V10-66 because postulated fire damage to cable nos. C11313A and C11313C could not spuriously open this valve.
- 6) Raceways containing safe shutdown cables that are routed through separation zones will be provided with one hour barriers where they are located inside separation zones.

REFERENCE DRAWINGS:

G191148 REV. 9
G191332 REV. 18
G191333 REV. 14

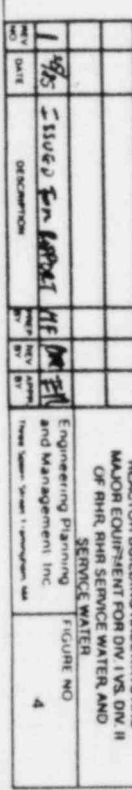
LEGEND:

- *** RHR, RHR SW (DIV. I)
- **** RHR, RHR SW (DIV. II)
- SEPARATION ZONE
- CONTAINMENT
- SUPPRESSION
- CONDUIT IN TRAY

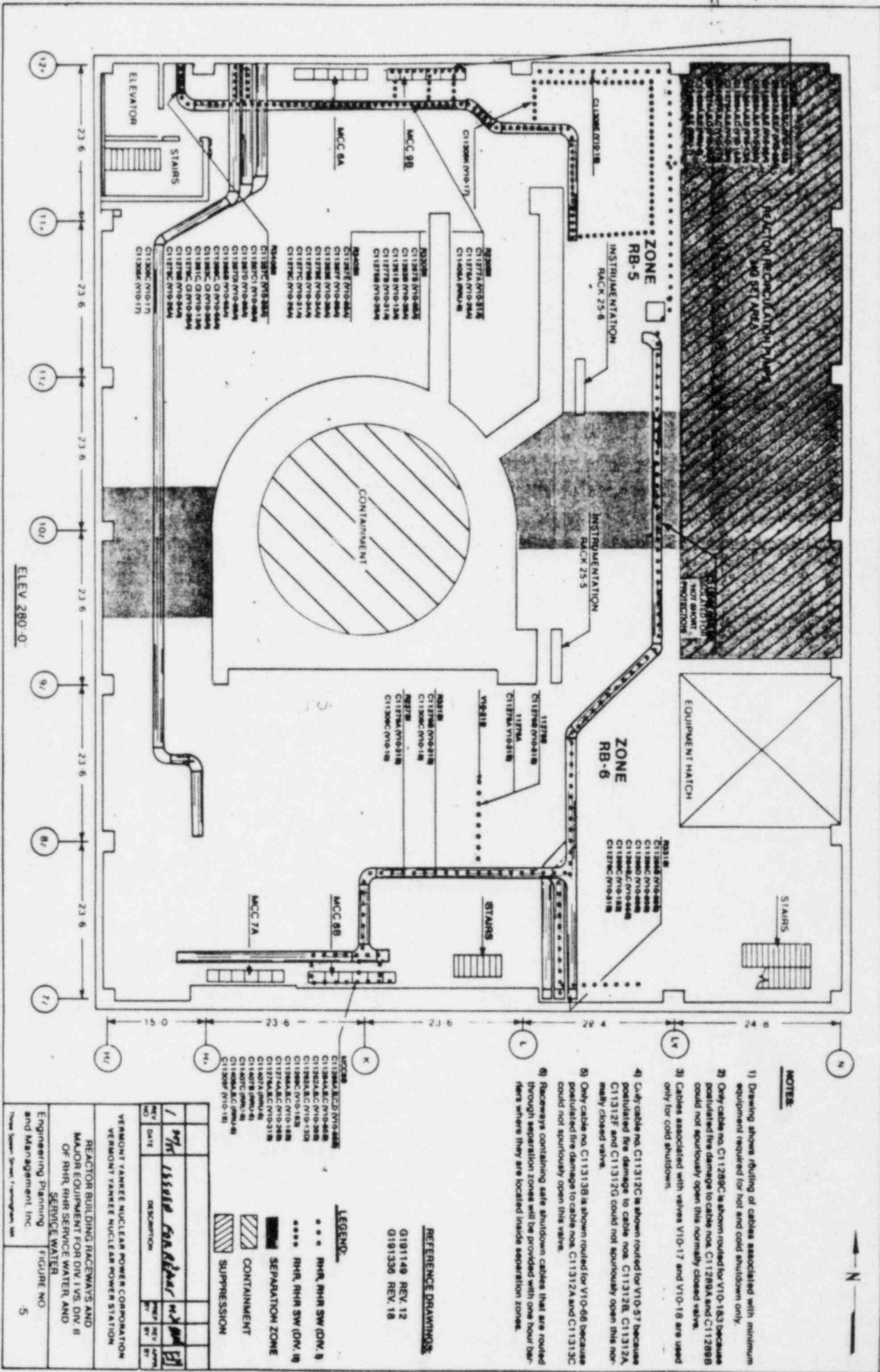


ELEVATION 232.6

REV	NO	DATE	DESCRIPTION	BY	CHK
1	15	15	15	15	15
VERMONT YANKEE NUCLEAR POWER CORPORATION VERMONT YANKEE NUCLEAR POWER STATION					
REACTOR BUILDING RACEWAYS AND MAJOR EQUIPMENT FOR DIV. I VS. DIV. II OF RHR, RHR SERVICE WATER, AND SERVICE WATER					
Engineering Planning and Management, Inc.					
FIGURE NO					3



- 1) Drawing shows routing of cables associated with minimum equipment required for Not and cold shutdown.
- 2) Only cable no. C11289C is shown routed for V10-1B3 because postulated fire damage to cable nos. C11289A and C11289B could not spontaneously open this normally closed valve.
- 3) Cables associated with valves V10-17 and V10-18 are unused only for cold shutdown.
- 4) Only cable no. C11312C is shown routed for V10-67 because postulated fire damage to cable nos. C11312B, C11312A, C11312F and C11312G could not spontaneously open this normally closed valve.
- 5) Only cable no. C11313B is shown routed for V10-66 because postulated fire damage to cable nos. C11312A and C11313C could not spontaneously open this valve.
- 6) Recovers containing safe shutdown cables that are routed through separation zones will be provided with one hour barriers where they are located inside separation zones.
- 7) Cables C11406B, C11406E, C11408B, and C11408E are shown routed through zone RB-4 because of the proposed MCC modification. RB1/5 and 7 will not be used for a fire affecting these cables.



REV	DATE	DESCRIPTION	BY	CHK	APP
1	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.
2	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.
3	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.
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5	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.
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12	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.
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17	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.
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94	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.
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98	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.
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100	11/11/88	CONSTRUCTION	W. J. B.	W. J. B.	W. J. B.

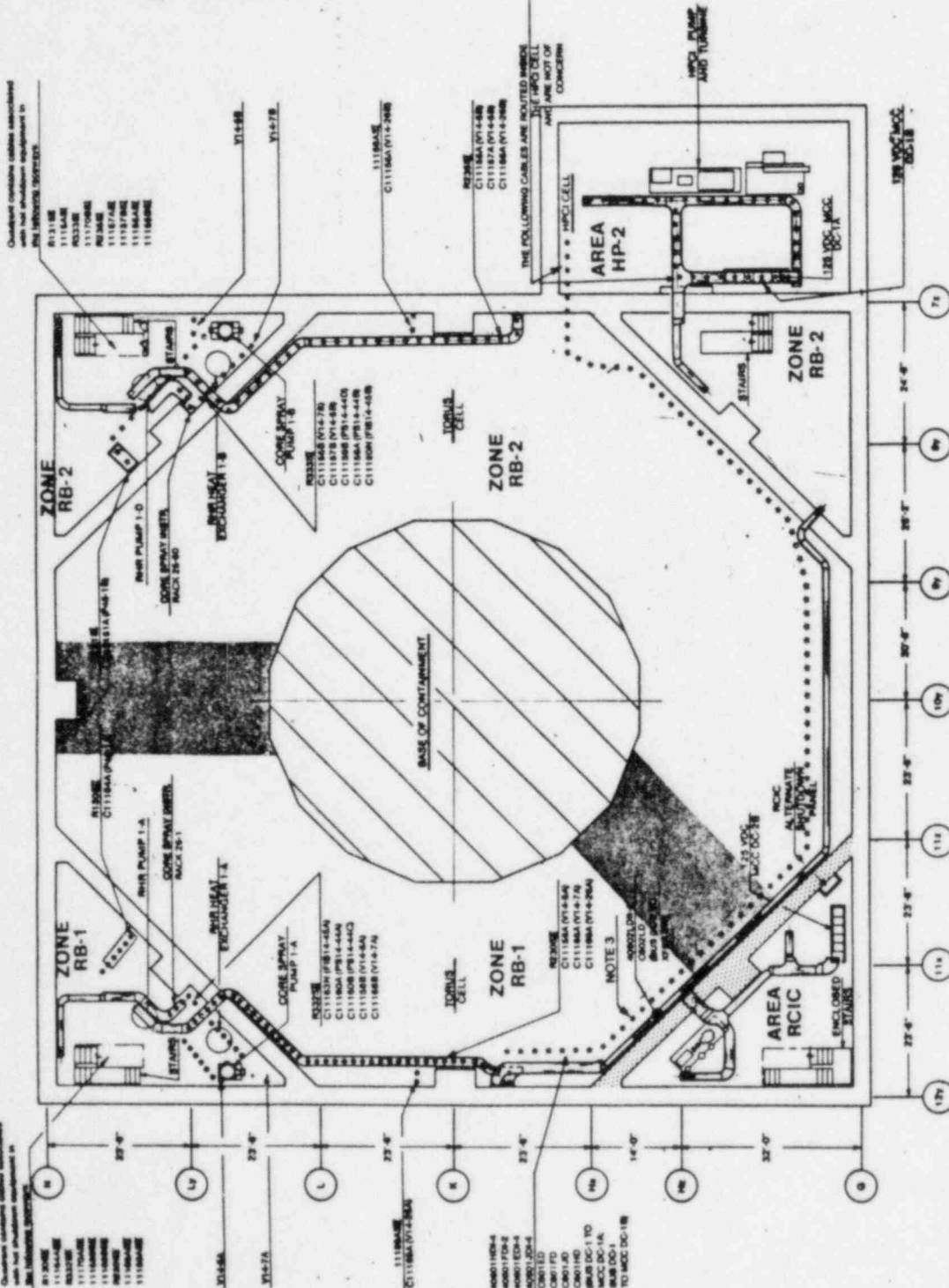
REACTOR BUILDING RACEWAYS AND
MAJOR EQUIPMENT FOR DIV I US, DIV II
OF RHR, RHR SERVICE WATER, AND
SERVICE WATER
Engineering Planning
and Management, Inc.
FIGURE NO. 5

Quadrant contains cables associated with hot shutdown equipment in the following locations:

11151AE
11152AE
11153AE
11154AE
11155AE
11156AE
11157AE
11158AE
11159AE
11160AE

Quadrant contains cables associated with hot shutdown equipment in the following locations:

11151AE
11152AE
11153AE
11154AE
11155AE
11156AE
11157AE
11158AE
11159AE
11160AE



NOTES

- 1) Drawing shows routing of cables associated with minimum equipment required for hot shutdown only.
- 2) Raceways containing safe shutdown cables that are routed through separation zones will be provided with one hour barriers where they are located inside separation zones.
- 3) Those cables are used only in case of fire in RCIC Cell (Area RCIC).
- 4) RCIC valves V13-15, V13-16, V13-20, V13-21, V13-30 will be manually operated, therefore cables associated with above valves are not shown for Zone RB-2 fire.
- 5) Reactor water level will be available in the main control room.

REFERENCE DRAWINGS

0131148 REV. 9
0181329 REV. 11
0181330 REV. 13
0181331 REV. 10

C11445A/B/G
C11443G
C11444A/B/F
C11433A/B/F
C11434A/B/F
C11437A/B
C11438A/B
C11439A/B
C11432C
C11432N/F/D/C
C11449R
C11433A/B/F
C11434A/B/F
C11435A/B/F
C11436A/B/F
C11437A/B/F
C11438A/B/F
C11439A/B/F
C11440A/B/F
C11441A/B/F
C11442A/B/F
C11443A/B/F
C11444A/B/F
C11445A/B/F
C11446A/B/F
C11447A/B/F
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C11475A/B/F
C11476A/B/F
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C11487A/B/F
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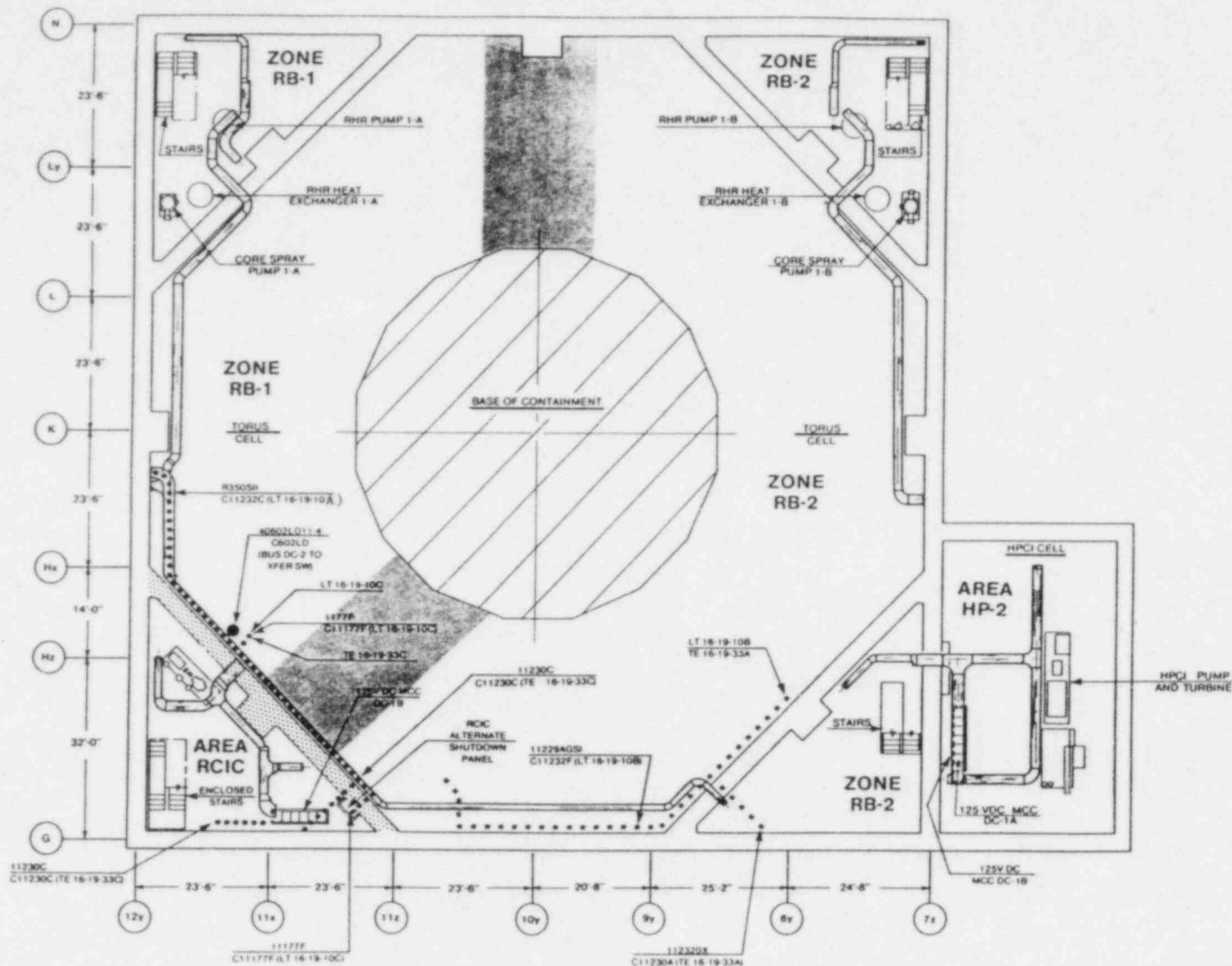
LEGEND

- REACTOR BUILDING FIRE BARRIER, 3-HR RATING
- CORE SPRAY ADS HPCL DIV. I
- CORE SPRAY ADS RCIC, DIV. II
- SEPARATION ZONE
- CONTAINMENT

REV	DATE	DESCRIPTION	BY	CHK	APP	REV
1	10/11/81	ISSUED FOR ASBUILT	WJ	WJ		
VERMONT YANKEE NUCLEAR POWER CORPORATION VERMONT YANKEE NUCLEAR POWER STATION						
REACTOR BUILDING RACEWAYS AND MAJOR EQUIPMENT FOR DIV. I VS. DIV. II OF CORE SPRAY, ADS, RCIC AND HPCL						
Engineering Planning and Management, Inc.						FIGURE NO
Three Station Street, Farmington, NH						-6-

ELEVATION 213-07





NOTES

- 1) Drawing shows routing of cables associated with minimum equipment required for hot and cold shutdown.
- 2) Raceways containing safe shutdown cables that are routed through separation zones will be provided with one hour barriers where they are located inside separation zones.

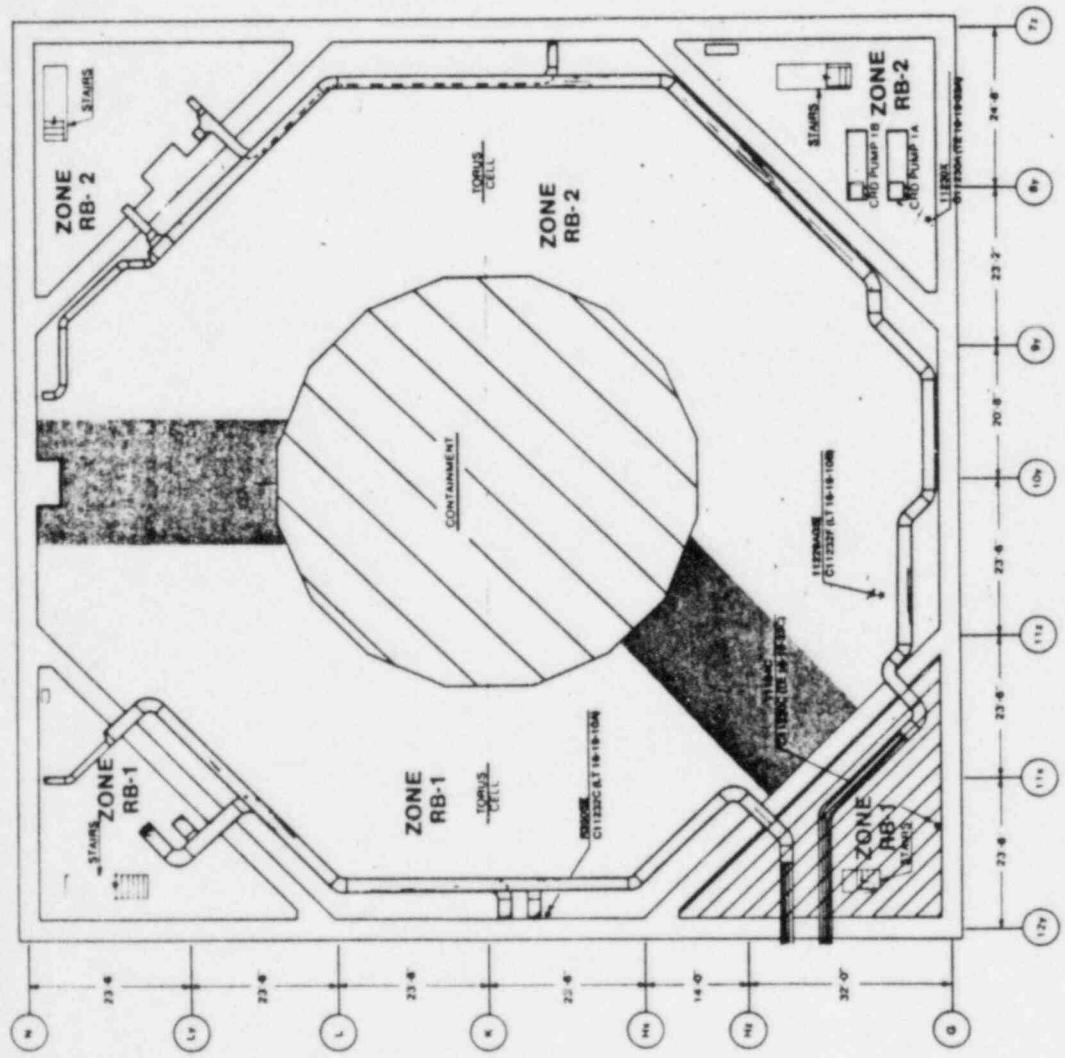
REFERENCE DRAWINGS

G191148 REV. 9
G191329 REV. 11
G191330 REV. 13
G191331 REV. 10

LEGEND

- REACTOR BUILDING FIRE BARRIER, 3-HOUR RATING
- DIV. I INSTRUMENTATION
- DIV. II INSTRUMENTATION
- SEPARATION ZONE
- CONTAINMENT

1	0%	ISSUED FOR REPORT		MS	MS
REV NO	DATE	DESCRIPTION		PREP BY	REV BY
VERMONT YANKEE NUCLEAR POWER CORPORATION VERMONT YANKEE NUCLEAR POWER STATION					
REACTOR BUILDING RACEWAY AND MAJOR EQUIPMENT FOR DIV. I VS. DIV. II PROCESS MONITORING					
Engineering Planning and Management, Inc.			FIGURE NO. 10		
Three Spaul Street, Framingham, MA					



NOTES:

- 1) Drawing shows routing of cables associated with minimum equipment required for hot and cold shutdown.
- 2) Raceways containing safe shutdown cables that are routed through separation zones will be provided with one hour barriers where they are located inside separation zones.

REFERENCE DRAWINGS:

- G18114- REV. 8
- G18133- REV. 18
- G18133- REV. 14

LEGEND:

- *** DIV I INSTRUMENTATION
- **** DIV II INSTRUMENTATION
- SEPARATION ZONE
- CONTAINMENT
- SUPPRESSION
- CONDUIT IN TRAY

REV	DATE	BY	CHKD	APP'D
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VERMONT YANKEE NUCLEAR POWER CORPORATION
VERMONT YANKEE NUCLEAR POWER STATION
REACTOR BUILDING RACEWAY AND
MAJOR EQUIPMENT FOR DIV. I VS. DIV. II
PROCESS MONITORING
Engineering Planning
and Management, Inc.
Three Super Street, Springfield, MA
FIGURE NO.
-11

ELEVATION 232.6



NOTES:

- 1) Drawing shows routing of cables as required with minimum equipment required for hot and cold shutdown.
- 2) Raceways containing safe shutdown cables that are routed through separation zones will be provided with one hour barrier walls where they are located inside separation zones.

REFERENCE DRAWINGS:

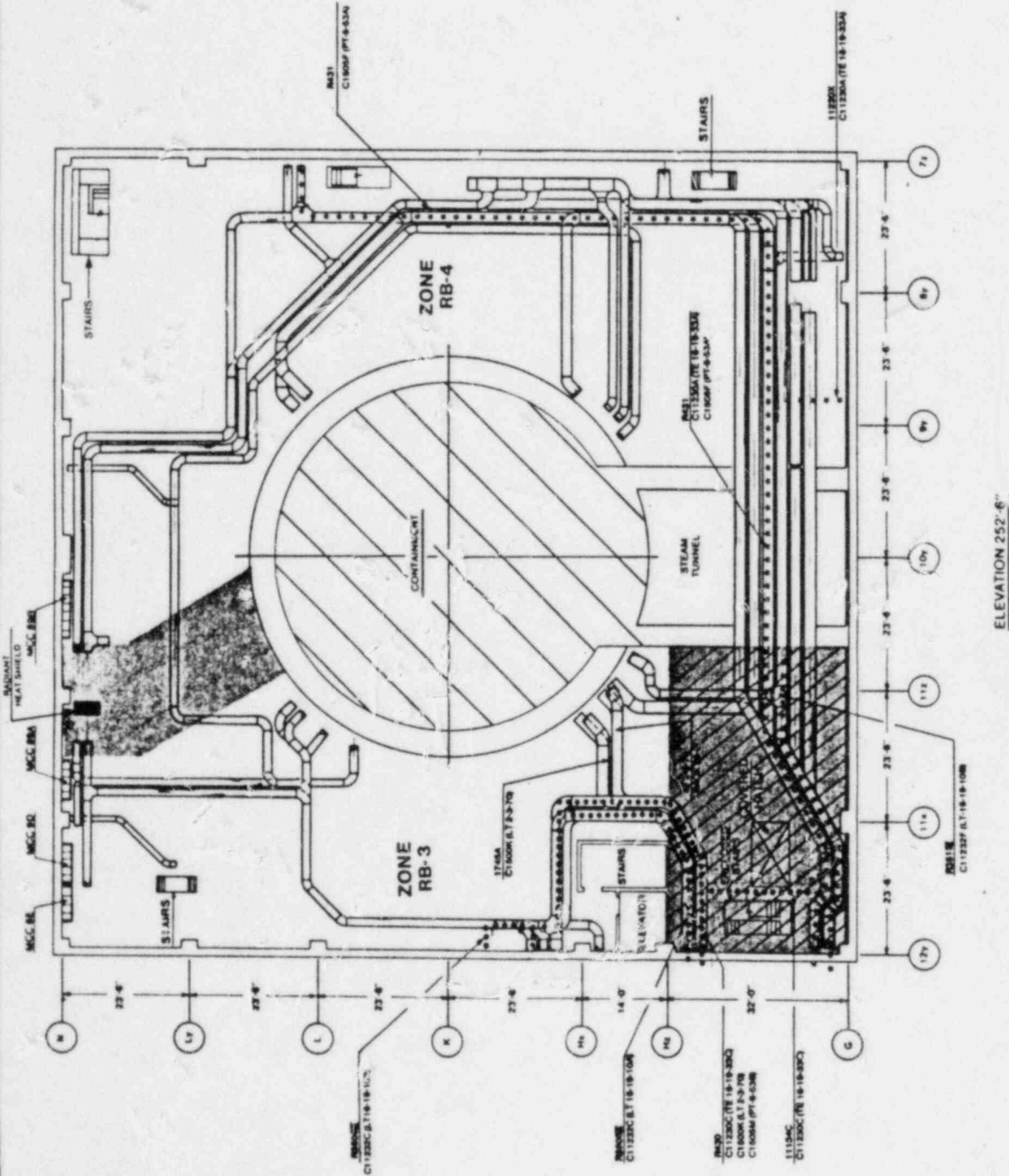
Q181148 REV. 9
Q181335 REV. 24
Q181334 REV. 21
Q181348 SMT 1 OF 3 REV. 9

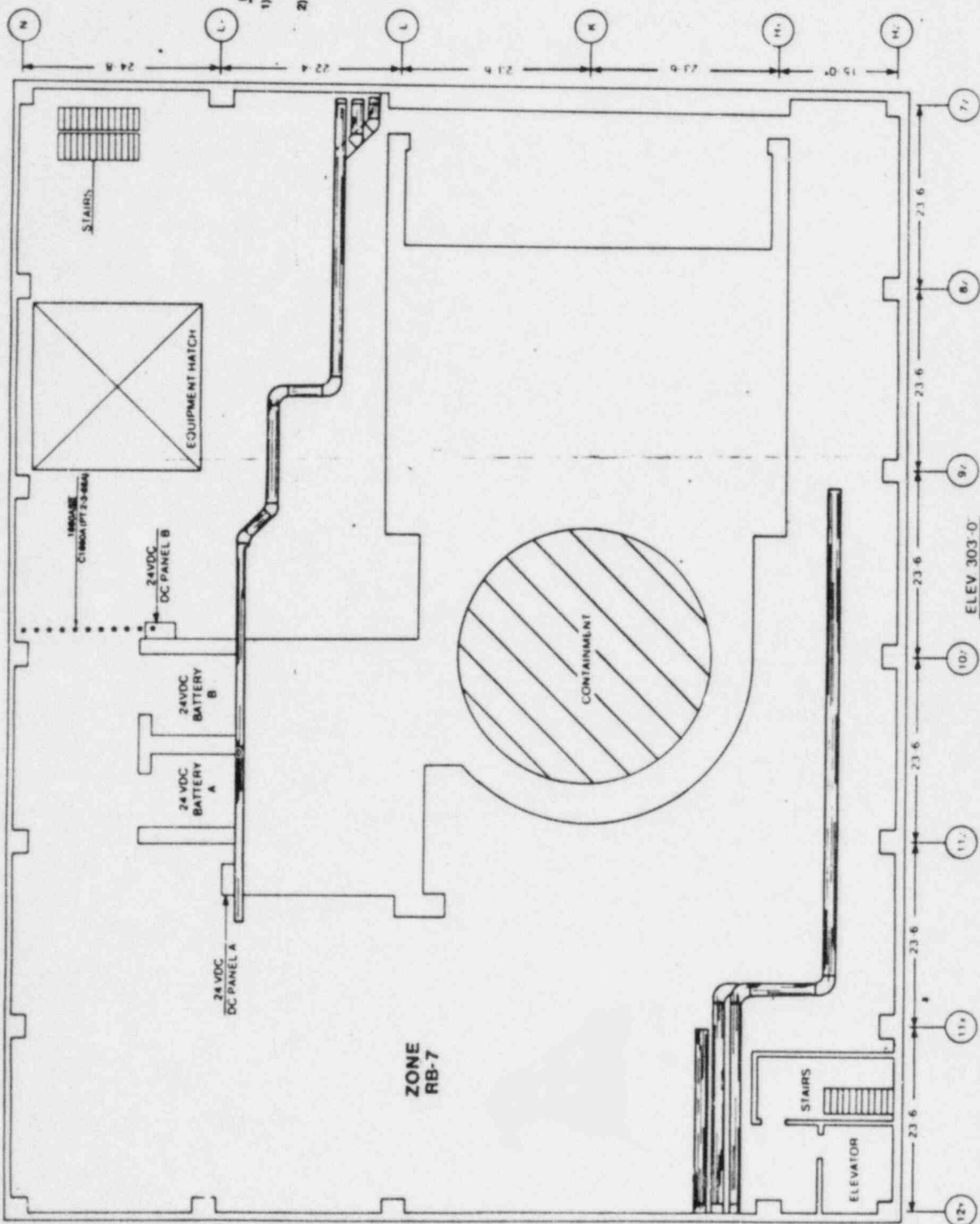
LEGEND:

- DIV. I INSTRUMENTATION
- DIV. II INSTRUMENTATION
- SEPARATION ZONE
- CONTAINMENT
- SUPPRESSION

REV	DATE	DESCRIPTION
1	12/15/88	FOR ASBBS
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VERMONT YANKEE NUCLEAR POWER CORPORATION
VERMONT YANKEE NUCLEAR POWER STATION
REACTOR BUILDING RACEWAY AND
MAJOR EQUIPMENT FOR DIV. I VS. DIV. II
PROCESS MONITORING
Engineering Planning and Management, Inc.
FIGURE NO. 12





NOTES:

- 1) Drawing shows routing of cables associated with minimum equipment required for hot and cold shutdown.
- 2) Raceways containing safe shutdown cables that are routed through separation zones will be provided with one hour barriers where they are located inside separation zones.

REFERENCE DRAWINGS:

G191149 REV. 12
G191337 REV. 11

LEGEND:

- DIV. I INSTRUMENTATION
- DIV. II INSTRUMENTATION
- SEPARATION ZONE
- CONTAINMENT

NO.	DATE	DESCRIPTION	BY	CHKD.	APP'D.
1	10/10/1988	For Review	19/08/88		

VERMONT YANKEE NUCLEAR POWER CORPORATION VERMONT YANKEE NUCLEAR POWER STATION	
REACTOR BUILDING RACEWAY AND MAJOR EQUIPMENT FOR DIV. I VLS DIV. II PROCESS MONITORING	
Engineering Planning and Management, Inc.	FIGURE NO. -14