

Wayne H. Jens
Vice President
Nuclear Operations

Detroit
Edison

Fermi-2
6400 North Dixie Highway
Newport, Michigan 48166
(313) 586-4150



Nuclear
Operations

June 18, 1985
VP-85-0142

Director of Nuclear Reactor Regulation
Attention: Mr. B.J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Youngblood:

- Reference: (1) Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-33
- (2) Detroit Edison to NRC Letter, "Additional
Fire Protection Information", NE-85-0275,
February 4, 1985
- (3) NRC to Detroit Edison Letter, "Fire
Protection Deviation Requests for the Fermi
2 Facility", March 1, 1985
- (4) Detroit Edison to NRC Letter, "Resolution
of Certain Fire Protection Issues",
NE-85-0365, March 4, 1985
- (5) Detroit Edison to NRC Letter,
"Qualification of Fire Doors", NE-85-0030,
January 23, 1985
- (6) Detroit Edison to NRC Letter "Submittal of
Deviations from Staff Interpretations of
Fire Protection Features in 10CFR50,
Appendix R and Justification", EF2-72717,
August 3, 1984

Subject: Additional Clarification Concerning
Fire Doors and Fire Detectors

This letter addresses three matters which have arisen in the
process of implementing License Condition 2.C.(9)(e) of the
Fermi 2 low power Operating License (Reference 1). The
matters are as follows:

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- a) UL Labeling of Doors R3-13 and T3-6
- b) Installation of Control Room Fire Detectors
- c) Blast Resistant and Watertight Doors

UL Labeling of Doors R3-13 and T3-6

The Reference (2) letter provided a deviation request for door R3-13 which separates the Control Room from the Turbine Building extension. Based on NRC comments in Reference (3), the Reference (4) letter transmitted a revised deviation request which was accepted as documented in Supplement 5 to the Fermi 2 Safety Evaluation Report (SSER 5). The deviation request justified the use of door R3-13 as a 1 1/2 hour door in a 3 hour fire resistance wall since the UL tests on a door prototypic of R3-13 exhibited minor deviations from UL acceptance criteria for the 3 hour rating. Acceptance criteria of UL10B for a 1 1/2 hour rating were met. As stated in the deviation requests, however, due to the unique size and security nature of the door, plus the results of applicable UL 3 hour tests for the prototypic door, R3-13 was not labeled by UL.

As indicated in Reference (4), Detroit Edison understood that door R3-13 would not require a UL label and explicitly did not commit to have door R3-13 labeled. This is not clear in SSER 5 except as may be implied in the use of the terms "fire rated" and "fire resistant". Detroit Edison understood that "fire resistant" recognizes the fact that the door is unique and would not be UL labeled.

Unlike door R3-13, it had been thought that UL would be able to apply a label to door T3-6 (see Attachment 1 to Reference (5)). UL recently notified Edison that for reasons similar to R3-13, they would not apply a label to door T3-6. Door T3-6 separates the Control Room from the Tagging Center located in the Turbine Building third floor, elevation 643'-6" (see Figure 1). Doors T3-6 and R3-13 are very similar - both separate the Control Room from the Turbine Building, both are security doors, both are oversized and unique and did not have UL labels applied.

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Attachment A provides a deviation request similar to the one provided in Reference (4) justifying the use of door T3-6 as a 1 1/2 hour fire resistant door in a 3 hour fire resistance wall. Door T3-6 is constructed similar to R3-13 and is considered to be bounded by the UL test for the prototype door R3-13 (see Reference (5)). Edison has vendor quality assurance confirmation that doors R3-13 and T3-6 are indeed constructed similarly to each other and to the prototypic door R3-13 tested at UL. Accordingly, based on Attachment A, Detroit Edison requests that, similar to door R3-13, door T3-6 be accepted as a fire resistant 1-1/2 hour door (unlabeled) and that a 1-1/2 hour door be accepted as providing adequate protection in preventing fires from propagating from the Tagging Center to the Control Room.

Installation of Control Room Fire Detectors

Reference (2) requested a deviation for fire detector placement in the Control Room in that the detectors were located above the drop ceiling and did not conform to the spacing requirements of NFPA72E (beam pocket criteria). Detroit Edison is modifying the detector installation above the drop ceiling to conform to NFPA72E. However, the primary concern with the staff was that there were no detectors located below the drop ceiling and, in particular, in the areas in back of the panels. SSER 5 was not explicit in this matter. Detroit Edison had informally agreed that detectors would be added below the drop ceiling behind the panels to resolve the staff's concern. Accordingly, Detroit Edison is adding ionization detectors to those areas behind the Control Room operating panels as shown in Figure 2. The design is not considered a deviation to NFPA72E-1974. As stated in the proposed deviation in Reference (2), the Control Room panels have ionization smoke detectors located in each panel and the Control Room is continuously manned. Accordingly, the detector placement shown in Figure 2 and the modifications above the drop ceiling to meet NFPA72E should resolve staff comments concerning the Control Room.

Blast Resistant and Watertight Doors

The Fermi 2 Fire Protection Analysis in Appendix 9B of the FSAR and Reference (6) both make reference to two specialty doors located in 3 hour fire rated boundaries. The doors in questions are 1) door R1-8, which is a watertight door located in fire zone 2 in the Auxiliary Building (el.583'-6") and 2) door R1-11, a blast resistant door between the steam tunnel and the Reactor Building.

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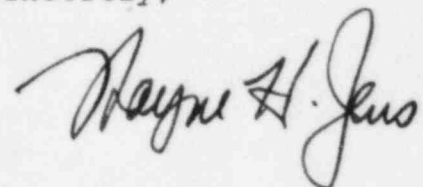
For additional detail on door R1-8 please refer to Figures 9B-4 of the FSAR and the discussion on "Fire Zone 2, Auxiliary Building", in Attachment III to Reference (6). For additional detail on door R1-11, please refer also to Figure 9B-4 and the discussion on "Fire Zone 5, Reactor Building", in Attachment III to Reference (6).

Doors R1-8 and R1-11 are not labeled doors and were not intended to be, based on their uniqueness. SSER 5 and License Condition 2.C.(9)(e) do not make it clear that this fact was recognized. Accordingly, Attachments B and C provide individual justifications for each of the above doors for use in three hour fire resistance boundaries. Detroit Edison concludes that due to the justifications provided and the unique dual nature of these doors, their being unlabeled is an acceptable deviation from the guidelines of Section D.1(j) of Appendix A to BTP ASB 9.5-1.

Accordingly, Detroit Edison requests the above clarifications be accepted and documented in the next revision of the Safety Evaluation Report to support completion of License Condition 2.C.(9)(e) of the low power license and issuance of the full power license.

If you should have any questions, please contact Mr. O. K. Earle at (313) 586-4211.

Sincerely,



cc: Mr. P. M. Byron
Mr. J. Holmes
Mr. M. David Lynch
Mr. J. M. Ulie
Mr. S. West
USNRC Document Control Desk
Washington, D.C. 20555

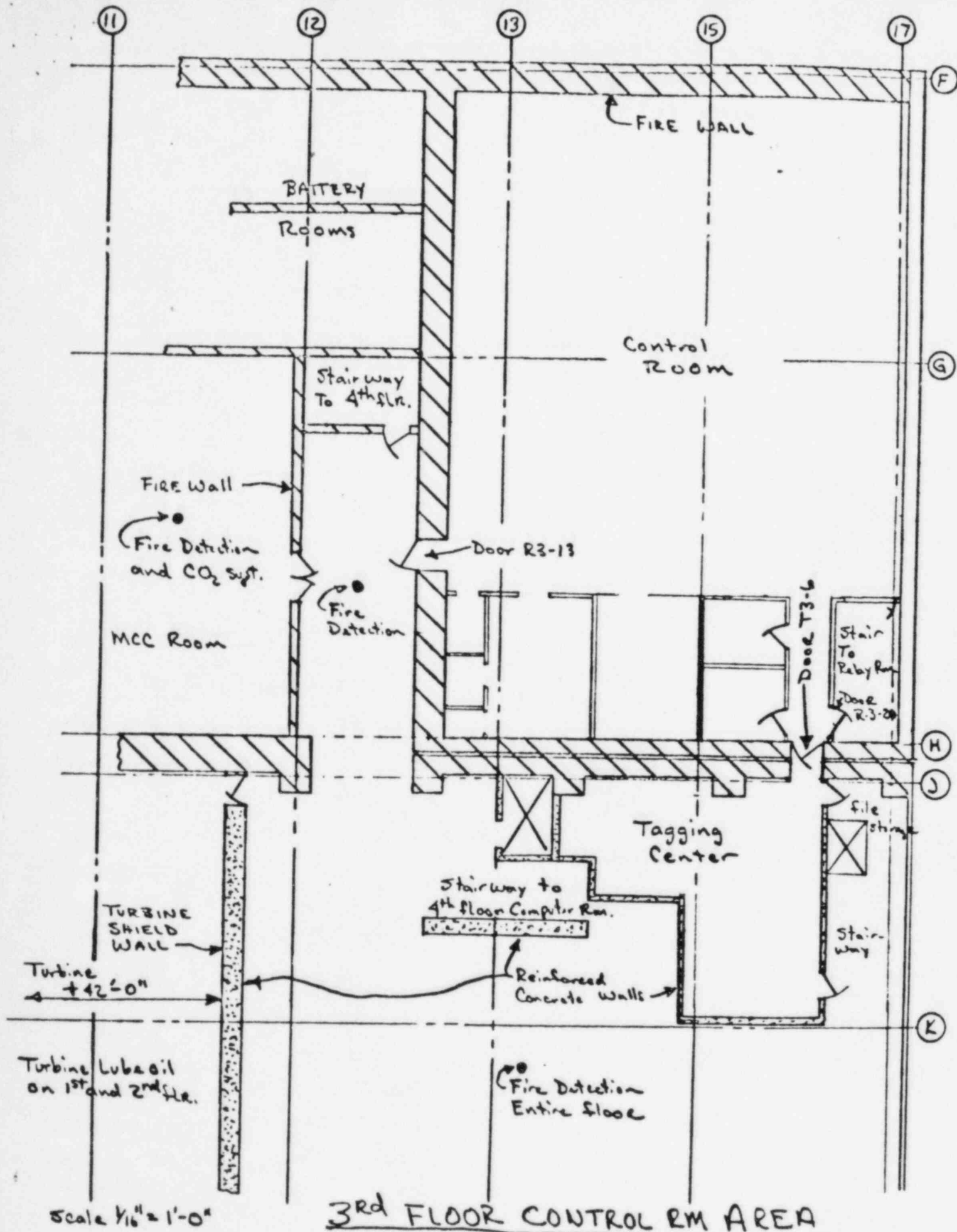
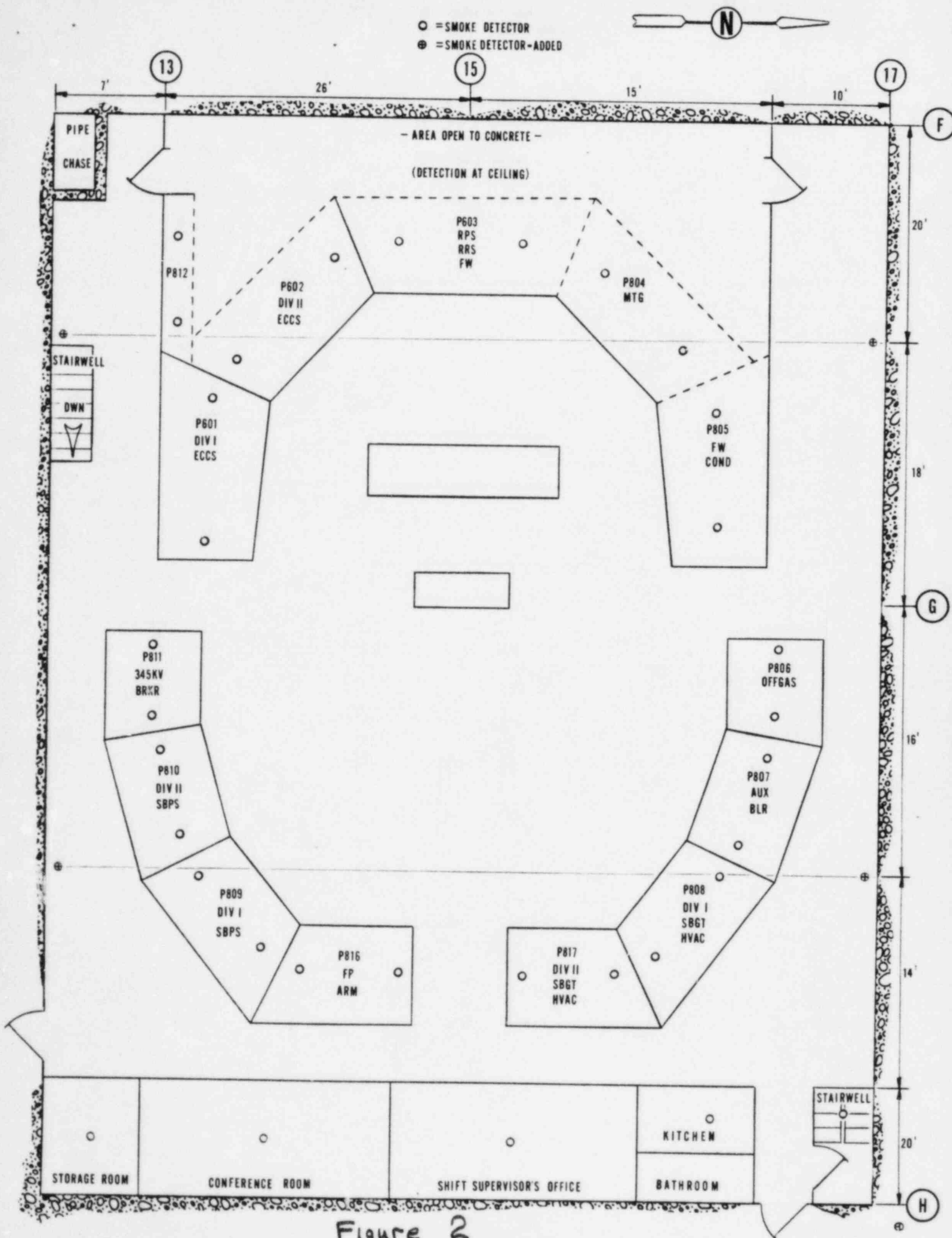


FIGURE 1

CLW
2-4-85



ATTACHMENT A

Evaluation of Fire Door T3-6

1.0 PROBLEM STATEMENT

U.L. Test No. 2* was a 3 hour fire test for door R3-13 which has a transom, and is 3'8" wide which exceeds the width limits of listed doors by this manufacturer (3'-6"). This door met the conditions of acceptance of UL10B for a 1 1/2 hour rating. Door T3-6 is also 3'8" wide but does not have a transom. T3-6 is 12 inches shorter than R3-13. Therefore, door T3-6 is bounded by the 1 1/2 hour test of Door R3-13. The door is intended for use in a 3 hour fire resistance wall.

1.1 AREA DESCRIPTION

Door T3-6 separates the Control Room from the Tagging Center which is located on the Turbine Building third floor elevation 643'-6". This security door is installed in a 3 hour fire resistance wall on the east side of the Control Room. The Tagging Center is a two story building and is constructed of 8 inch thick reinforced concrete walls. The 1st and 2nd floor ceilings are of concrete on a metal deck on steel beams. Door openings between the Tagging Center and Turbine Building are protected by unrated metal assemblies because the Class B door labels were inadvertently removed during construction and Edison designed steel channel was utilized. Unprotected ventilation duct penetrations (approximately 4) and unsealed conduit penetrations (approximately 10) also exist between the Tagging Center and Turbine Building. Even though a fire rating cannot be assigned, the Tagging Center does provide a positive fire barrier around the door opening.

1.2 FIRE HAZARDS ANALYSIS

The Tagging Center is an extension to the Control Room and is utilized by the operations staff for such tasks as assigning work to operators, and review of work packages. The Center is arranged as an office with metal desks, tables, file cabinets and book cases. The majority of the paper is enclosed in metal with the fire loading being less than 2 lb/sq. ft. The turbine is located approximately 70 ft. away behind a concrete shield wall, (approximately 20 ft. high). The lube oil storage rooms for the turbine are located on the first and second floor of the Turbine Building in fire rated rooms with automatic sprinkler protection. Presently, fixed combustibles located north of column 12 between columns K-N are negligible (less than 1 lb/sq. ft. consisting of miscellaneous panels and wiring). Transient combustibles could be present during turbine outages, but they will be controlled administratively. Typically they would be located on the turbine floor east of column K, which is approximately 25 ft. from door T3-6.

1.3 FIRE PROTECTION

The Control Room has ionization smoke detectors installed above the drop ceiling and in the Control Room panels. The Control Room is manned at all times. Halon and CO portable fire extinguishers are located on the north and south walls of the Control Room. The Tagging Center is manned at all times. Dry chemical portable fire extinguishers are provided in the Tagging Center. Hose stations are located on the turbine floor. Ionization smoke detection is provided on the Turbine Building third floor

1.4 SAFE SHUTDOWN EQUIPMENT

The Control Room contains safe shutdown panels that have been protected to minimize exposure damage.

The Tagging Center and the Turbine Building contain no safe shutdown equipment.

1.5 CONCLUSION

Door T3-6 is considered adequate for its installation in a 3 hour rated fire wall (resulting in a 2 hour fire rated wall/door combined assembly). Because the Tagging Center and Turbine Building contains limited fixed combustible materials, and transient combustibles are maintained by administrative controls, a 1 1/2 hour fire resistance door assembly provides adequate protection.

* UNDERWRITERS LABORATORIES INC.:

- a) Project 83NK23366, File NC699, Report NC699-1, "Two Fire and Hose Stream Tests on Special Purpose Type Fire Door and Frame Assemblies", April 26, 1984
- b) Project 83NK23365, File NC698, Report NC699-2, April 24, 1985

NOTE: Both of the above references were transmitted to NRC with Reference 5.

ATTACHMENT B

DOOR R1-8

Door R1-8 is a watertight door which subdivides the south end of fire zone Auxiliary Building (First Floor Mezzanine 583'/603'). The barrier/door separates a Division I area from a Division II area (sketch attached). The watertight door is located in a 24 inch thick concrete wall with three hour penetration seals.

The door is approximately a 1 1/2 inches thick hollow steel door with five positive latching points.

Area Description

Please refer to the attached sketch. North of column line 9 is an Appendix R Division II cable routing area. The fire loading in this area is less than one hour.

South of column line 9 is the Division I cable entry vault area with also a less than one hour fire loading.

Fire Protection

The Division II cable routing area is fully covered with sprinklers along with automatic smoke detection as indicated in the sketch.

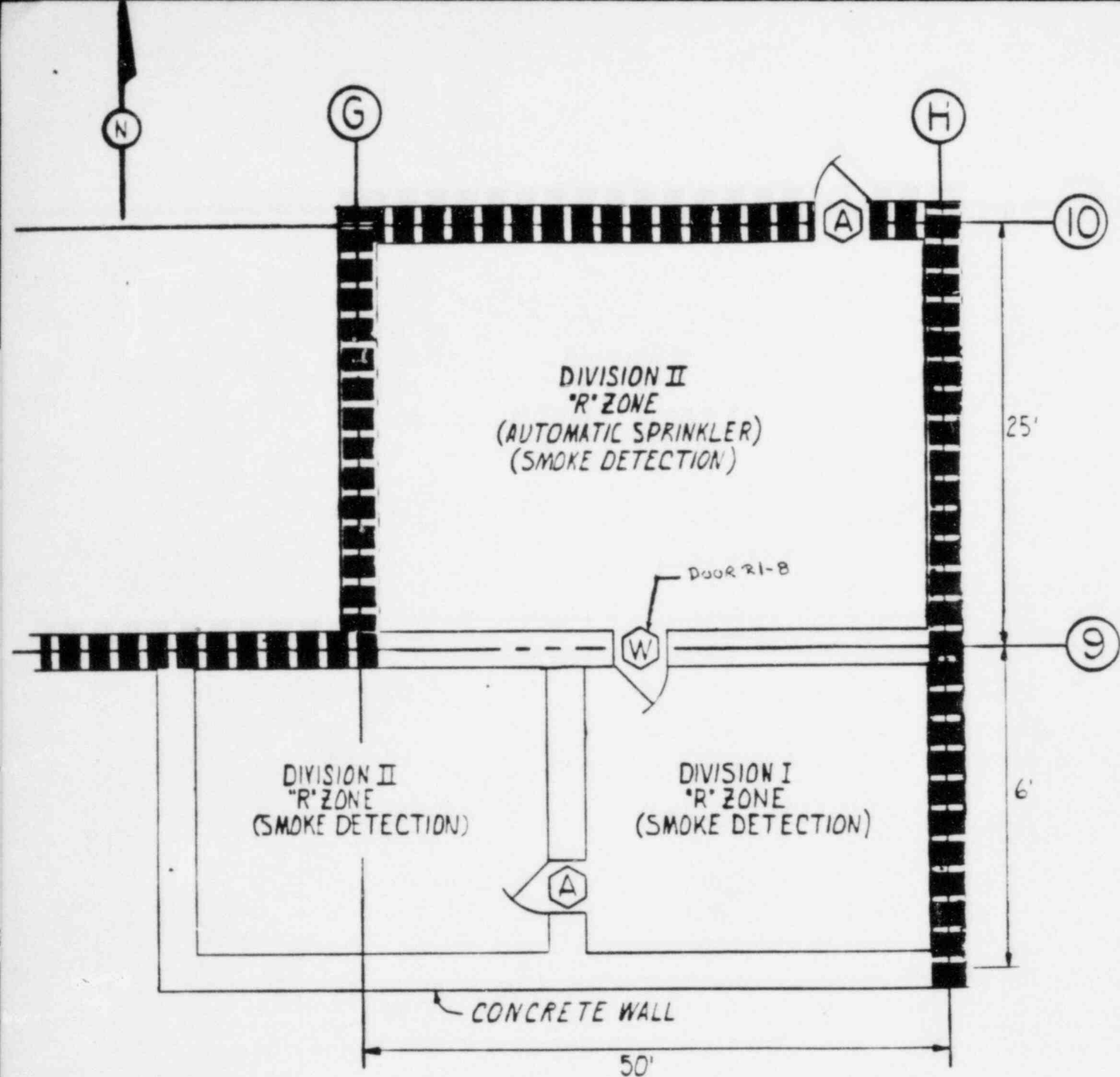
Division II cable runs are located approximately 20 ft. off the floor. Vertical risers have horizontal metal covers to approximately 10 ft. off the floor.

The Division I cable entry vault has smoke detection.

Portable fire extinguishers and hose stations are available for fire brigade use.

Safe Shutdown Analysis and Conclusion

The two areas in question contain safe shutdown cable of opposing divisions. The safe shutdown cables are separated by approximately 20 ft., a 24" thick concrete wall, 3 hour fire seals, and a watertight door. The only deviation from the explicit guidelines of BTPASB 9.5-1 is that the special watertight door is not a listed UL door. This door, however, is a multi-purpose steel watertight specialty door of substantial construction with five latch points. Given that there is fire detection in both areas, sprinklers in the cable routing area, and a light combustible loading, reasonable assurance is provided that the two foot thick barrier wall and its watertight specialty door will prevent fire propagation between the two areas.



LOCATION OF DOOR R1-8

SKETCH #1

ZONE 2
S. AUXILIARY BLDG
EL. 5B3'

ATTACHMENT C

Door R1-11

As previously submitted in our August 3, 1984 letter, Door R1-11 is a blast resistant door located in the three hour barrier separating the north end of the first floor Reactor Building from the Steam Tunnel. This is a heavy metal door with four positive latching points. The door is located on the labyrinth access passage between the two areas.

Area Description

Please refer to the attached sketch. The combustible loading in the steam tunnel is negligible. (Loading is approximately <1 Btu/sq. ft.). The average combustible loading in the first floor Reactor Building is 19,000 Btu/sq. ft. (15 minute fire loading).

Fire Protection

Automatic fire detection is provided in the Reactor Building first floor. Fire hose stations and portable fire extinguishers are provided.

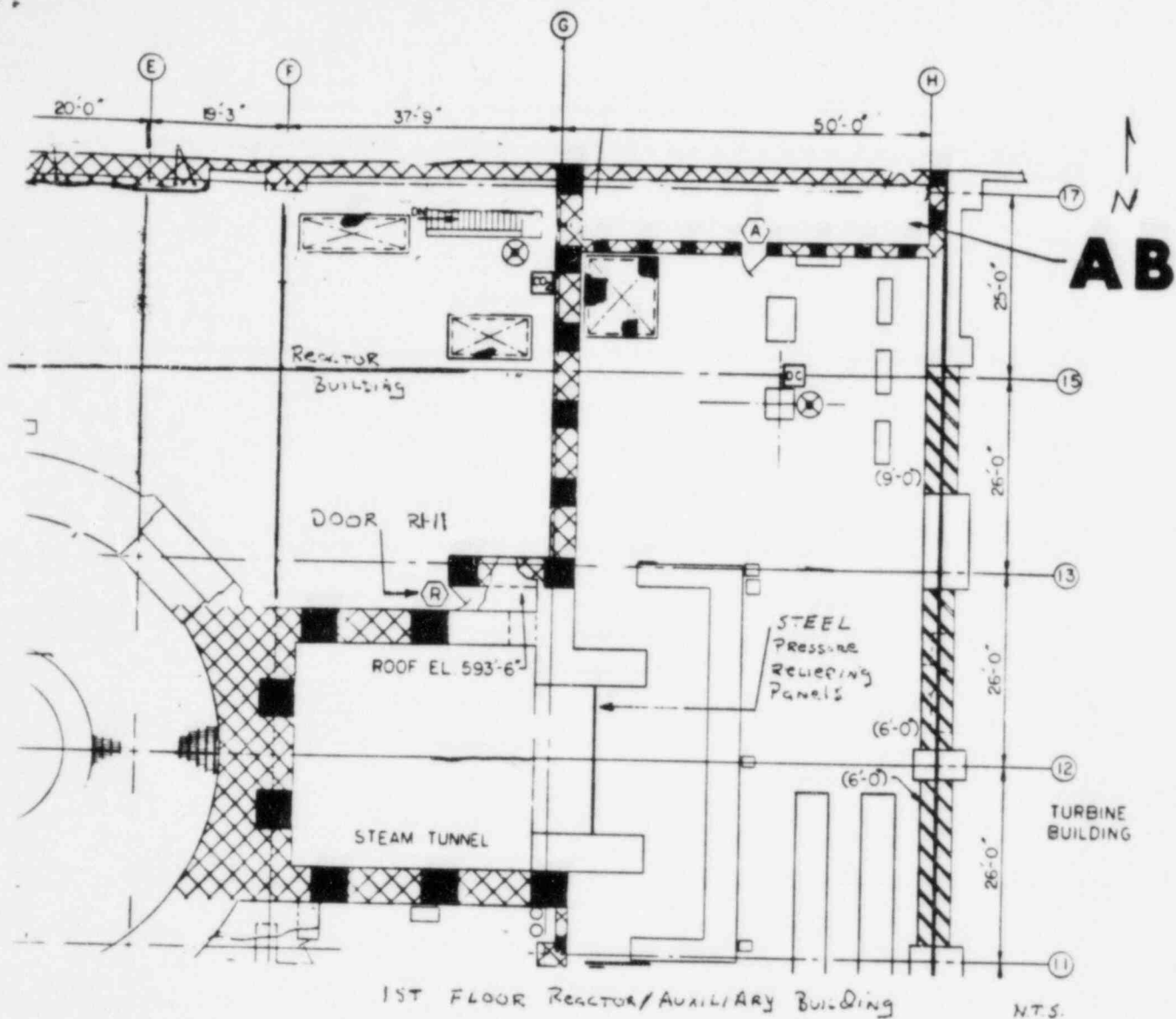
Due to the steam tunnel being a radioactive Level X area (highest level), access to the area will be controlled. Additionally this is not the normal pathway between the Reactor and Turbine Building. Steam tunnel temperatures are monitored by ambient tunnel temperatures and HVAC differential temperature (supply air vs. exhaust air) which should provide alternate means of detecting abnormally high temperatures.

Safe Shutdown Analysis

A cable/equipment analysis for both the steam tunnel and the first floor Reactor Building, north side, demonstrate that Division II equipment is available outside of the subject areas for shutdown, assuming a simultaneous fire in both areas.

Analysis and Conclusion

This blast resistant door in combination with the light fire loading, the fire detection system and the labyrinth access passage, will prevent fire propagation between the steam tunnel and the first floor Reactor Building. Regardless, both areas are not required for safe shutdown.



LOCATION OF DOOR RI-11; BLAST RESISTANT DOOR