

NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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October 21, 1985

Docket No. 50-423
B11814

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

Reference: (1) J. F. Opeka letter to B. J. Youngblood, "Request for
Deviations from BTP CMEB 9.5-1," dated October 1, 1985.

Dear Mr. Youngblood:

Millstone Nuclear Power Station, Unit No. 3
Response to SER Open Item 14.3
Request for Deviation from BTP CMEB 9.5-1

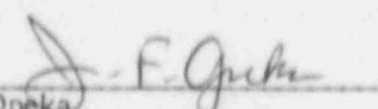
In Reference (1), Northeast Nuclear Energy Company (NNECO) transmitted a deviation request from Branch Technical Position (BTP) CMEB 9.5-1 regarding Auxiliary Building - Separation Criteria for the NRC Staff review and approval. In a recent telephone conference, the Staff requested additional information concerning this deviation request. Attachment I provides a revised deviation request for the Staff review and approval. This submittal should also resolve the Staff's concern regarding SER open item 14.3 concerning safe shutdown capability.

If you have any questions regarding this submittal, please contact our licensing representative directly.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY
et.al.

BY NORTHEAST NUCLEAR ENERGY COMPANY
Their Agent

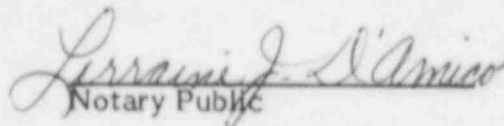

J. F. Opeka
Senior Vice President

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STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me J. F. Opeka, who being duly sworn, did state that he is Senior Vice President of Northeast Nuclear Energy Company, an Applicant herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Applicants herein and that the statements contained in said information are true and correct to the best of his knowledge and belief.


Notary Public

My Commission Expires March 31, 1988

ATTACHMENT I

Request for a Deviation from BTP (CMEB 9.5-1)

1. Auxiliary Building - Separation Criteria, a deviation from Section C.5.b.(2).

DEVIATION REQUEST

MILLSTONE UNIT NO. 3 Auxiliary Building - Separation Criteria

BRANCH TECHNICAL POSITION GUIDELINES

BTP CMEB 9.5-1 Section C.5.b(2) states:

To meet the guidelines of Position C.5.b.1, one of the following means of ensuring that one of the redundant trains is free of fire damage should be provided:

- a. Separation of cables and equipment and associated circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers should be protected to provide fire resistance equivalent to that required of the barrier;
- b. Separation of cables and equipment and associated 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 should be installed in the fire area; or
- c. Enclosure of cable and equipment and associated circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system should be installed in the fire area.

RESPONSE

Fire Area AB-1 encompasses all elevations and areas of the auxiliary building from el. 4 ft-6 in. to el. 66 ft-6 in., with exception of:

1. The MCC and Rod Control Rooms and their associated air conditioning cubicles, and
2. The auxiliary building, fuel building, and SLCRS filter cubicles.

Fire Area AB-1 consists of six separate fire zones which communicate freely both horizontally and vertically. These fire zones are AB-1A and AB-1B, located on el. 4 ft-6 in.; AB-1C and AB-1D, located on el. 24 ft-6 in.; and AB-1E and AB-1F, located on el. 43 ft-6 in. and el. 66 ft-6 in., respectively.

Fire protection features that have been provided throughout the various fire zones are: early warning smoke detection systems, manual hose stations, and portable fire extinguishes, all designed and installed in accordance with the guidelines of the applicable NFPA codes. In addition, a wet pipe sprinkler system - in the form of a water curtain design - has been provided on el. 24 ft-6 in. of the auxiliary building, above the entrances to the charging pump cubicles. The water curtain is routed east-west across the northern

face of the charging pump cubicles, with nozzles located to protect the entrance vestibule of each cubicle and above and below each cable passing north and south through the vertical plane of the water curtain design. Fire stops have been installed in each cable tray that passes through the water curtain to assure a fire will not propagate along the cables through the water curtain to the other side. The purpose of this water curtain is to provide an equivalent horizontal separation between the charging pumps and the reactor plant component cooling water pumps, all of which are located on el. 24 ft-6 in. This water curtain will be referenced throughout the remainder of this discussion to provide relative locations.

Located within Fire Area AB-1 are two safe shutdown systems, either one of which provides an alternate method of supplying reactor coolant pump (RCP) seals cooling. These systems are the reactor plant component cooling water system (CCP) and the charging system (CHS).

Also located within Fire Area AB-1 are cables and valves of alternate methods of providing the safe shutdown support function of supplying conditioned air to the MCC and Rod Control Rooms.

Equipment necessary to support the CHS or CCP function, and equipment necessary to support the MCC and Rod Control Room air conditioning function were analyzed in regards to physical location and cable routings for separation and availability. This analysis is documented in NERM-64, Attachment 6.

As a result of this analysis, NNECo proposes the following modifications.

In view of the fact that the MCC and Rod Control Room air conditioning units are physically located in separate fire areas outside Fire Area AB-1, the cables for one of the air conditioning units (ACU) will be routed out of Fire Area AB-1. With this modification no deviation will exist for cable separation of the ACUs. A deviation would still exist, however, due to the inadequate separation of the service water valves which supply cooling water to the ACUs. On the basis of the circuit failure analysis which was performed for both valves - which indicates the valves will remain in their as-is condition, even though operability and position indication may be lost due to a fire in AB-1 - the service water valves will be modified from normally closed to normally open.

NNECo proposes to create three protected zones which will provide adequate separation, both horizontally and vertically, to ensure that either CCP or CHS is available to provide RCP seals cooling.

Basically this "defense-in-depth" concept relies on the ability to either confine a fire and its combustion products on el. 4 ft-6 in. and el. 24 ft-6 in. north of the installed water curtain; or to confine a fire south of the water curtain on el. 24 ft-6 in. (east of charging pump 3C cubicle west wall) and on el. 43 ft-6 in. and

el. 66 ft-6 in.; or south of the water curtain on el. 24 ft-6 in. (west of charging pump 3C cubicle) in the area of the CHS pumps cooling pumps.

To achieve this separation and confinement, NNECo proposes to upgrade the existing water curtain on el. 24 ft-6 in., and to install water suppression, fire seals, and ventilation duct protection as required. The new fire boundaries are depicted on attached sketches 1 and 2.

The existing water curtain on el. 24 ft-6 in. will be modified to increase its effectiveness to detect and extinguish fires by installing either smoke/heat draft curtains or high speed response sprinkler heads or a combination of both.

The water suppression systems will be installed to protect the following vertical openings:

1. Pipe opening at the south end of charging pump cubicles.
2. Open stairwell from el. 4 ft-6 in. to el. 24 ft-6 in.
3. Open stairwell from filter and demineralizer area - el. 18 ft-6 in.
4. Boron evaporator cubicle near floor el. 43 ft-6 in.

In addition, the charging pump ventilation supply ducts from el. 43 ft-6 in north of the installed water curtain, will also be protected externally by water suppression.

The following walls will be fire stopped on el. 24 ft-6 in:

1. Charging pump 3A cubicle east wall
2. Charging pump 3C cubicle west wall
3. Boron evaporator and gaseous waste system degasifier cubicle corridor walls south of installed water curtain.
4. Filter and demineralizer cubicle corridor walls south of installed water curtain.

The following floor areas will be fire stopped:

1. On el. 24 ft-6 in, south of installed water curtain; excluding those areas previously designated to be protected by water suppression.
2. On el. 43 ft-6 in, north of the installed water curtain (on el. 24 ft-6 in) excluding a) the Boron evaporator cubicle which is protected by water suppression and b) the equipment hatches which are sealed with concrete plugs.

In addition, the el. 43 ft-6 in. floor area south of the water curtain and west of the Boric Acid Tank and Boric Acid Transfer Pump cubicles will be fire stopped.

Ventilation duct lines penetrating any of the aforementioned barriers will be protected by installing 3-hr fire dampers or in-duct sprinkler heads. The in-duct sprinkler head will produce a water curtain effect for the interior of the duct.

Several cables will be rerouted as required to preserve the protected zone approach.

With the installation of the aforementioned modifications a fire hazards analysis of Fire Area AB-1 yields the following results.

- A fire north of the installed water curtain on el. 24 ft-6 in. or a fire on el. 4 ft-6 in. will not affect the operation of charging pump 3CHS*PJA or associated support systems.
- A fire south of the installed water curtain on el. 24 ft-6 in, in the area of the charging pump cooling water pumps, will not affect the operation of two reactor plant component cooling water pumps (3CCP*PIA and PIC).

NOTE: It should be noted that manual valve operations may be required to supply CCP to all four RCP seals.

- A fire south of the installed water curtain on el. 24 ft-6 in, in the area of the east cable penetration or in the charging pump cubicles, or a fire on el. 43 ft-6 in, or on el. 66 ft-6 in, will not affect the operation of one CCP pump (3CCP*PIB).

The following active and passive fire protection features assure that a fire in this area will not affect safe shutdown.

- Existing smoke detection will provide early warning of a fire condition.
- Fire brigade response/manual suppression will extinguish any postulated fire.
- Cables are IEEE-383 qualified. Damage threshold of EPR/hypalon cables is in the order of 260°C.
- The installation of fire rated sealant to preserve the integrity of the new defined fire barriers.
- The installation of a water curtain at the cubicle doorways and tray area and protection of vertical openings.

NNECo concludes that with the above mentioned features/modifications for this area, an acceptable level of fire protection will be

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maintained, equivalent to the intent of Section C.5.b(2) of BTP CMEB
9.5-1.

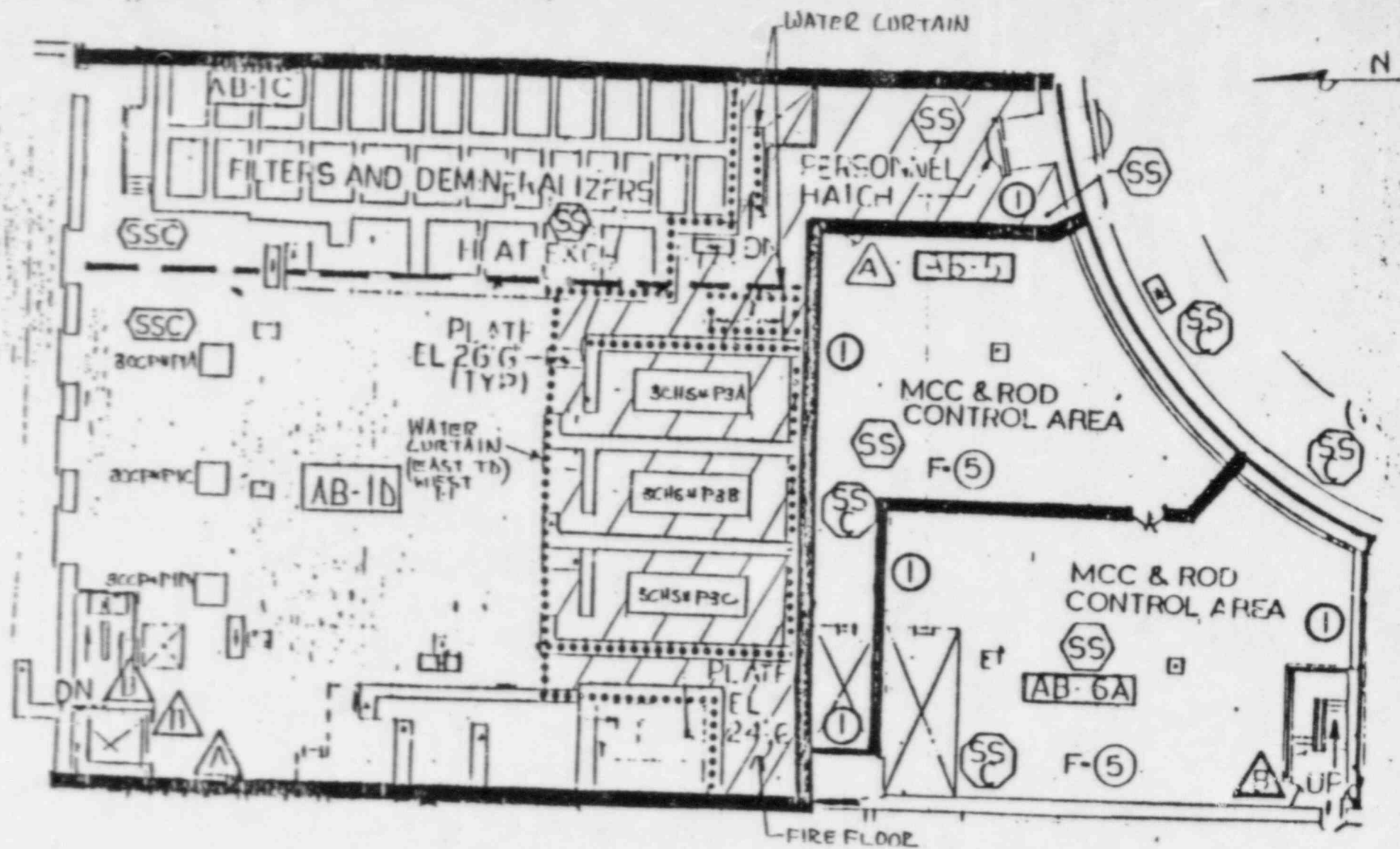


FIGURE 1

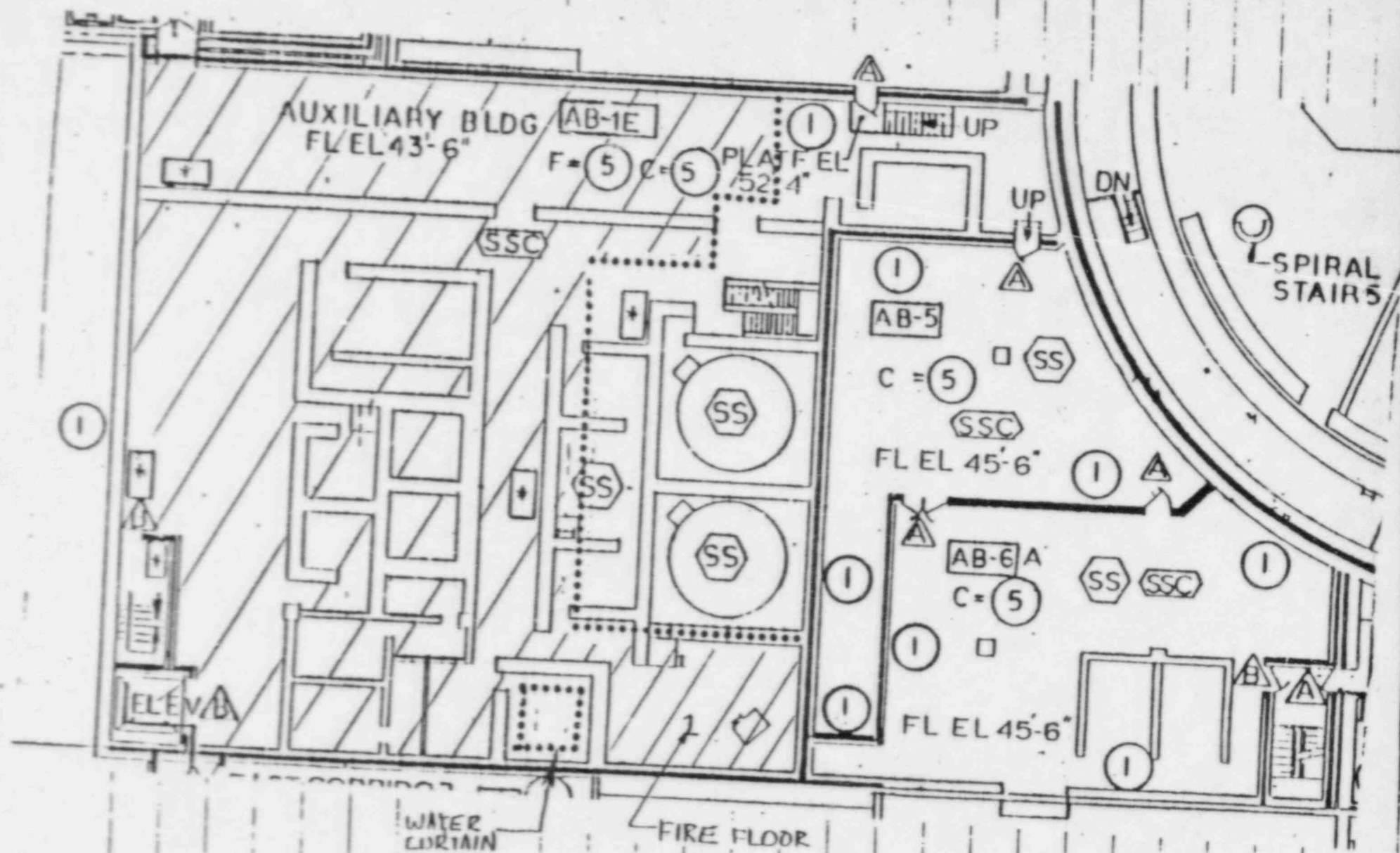


FIGURE 2