

**Florida
Power**

CORPORATION
Crystal River Unit 3
Docket No. 50-302

July 29, 1992
3F0792-12

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Bulletin 92-01: Failure of Thermo-lag 330 Fire Barrier System to
Maintain Cabling in Wide Cable Trays and Small Conduits Free from
Fire Damage

Dear Sir:

Florida Power Corporation (FPC) hereby submits the information requested in NRC Bulletin No. 92-01, "Failure of Thermo-lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free from Fire Damage." The information provided includes identification of the areas of the plant which contain Thermo-lag 330 (TSI) fire barrier material protecting equipment providing safe shutdown capability, identification of the areas which use TSI material for protecting small diameter conduit and wide trays, the compensatory measures implemented in accordance with Crystal River Unit 3's (CR-3) Technical Specifications for an inoperable fire barrier, and the measures being taken to ensure or restore fire barrier integrity. A general floor plan including the location of fire detection devices, fire suppression coverage, and the route of the hourly roving fire watch is provided to aid in understanding the information contained in this submittal (Attachment 3).

Identification of TSI Material Protecting Safe Shutdown Capability

A review of the fire protection design information for Crystal River Unit 3 has confirmed that 1-hour and 3-hour pre-formed TSI material was installed at this facility. The areas of the plant which contain TSI fire barrier material that provide safe shutdown capability are listed in Attachment 1. The use and location of the TSI material was determined using drawings, circuit layouts, modification documentation, and plant walkdowns.

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TSI Material Protecting Small Conduit and Wide Trays

The areas of the plant containing TSI fire barrier material protecting small diameter conduit and wide trays that provide safe shutdown capability are identified in Attachment 2. The conduit identified represent small diameter conduit of less than four (4) inches, and the wide cable trays are those with a width of greater than fourteen (14) inches.

Compensatory Measures

The compensatory measures which have been established at CR-3 include the following. The hourly roving fire watch which was in-place at CR-3 to cover degraded fire barriers was expanded to cover those areas of the plant that rely on TSI material for protection of safe shutdown capability and which are equipped with fire detection equipment. A continuous fire watch was initially established in three areas, AB-95-3K, AB-95-3W and AB-95-3Y, that rely on TSI material for protection of safe shutdown capability and that were not equipped with fire detection devices. The continuous fire watch was replaced with the hourly roving watch once new, portable fire detectors were installed and operable. The new portable fire detection system consists of ionization and photoelectric smoke detectors which are linked to a central alarm panel. The system is a class 'B' supervised system which provides either fire or trouble alarms at the central panel and to the main Control Room and to the Nuclear Security Central Alarm Station. The alarm capability to the Control Room and the Nuclear Security Central Alarm Station is accomplished via the use of an automatic dialer and a dedicated telephone circuit. The remote central panel is monitored on an hourly basis by the roving fire watch.

These compensatory actions are in accordance with the requirements of CR-3's Technical Specification Section 3.7.12, "Fire Barriers." The hourly roving fire watch presently covers all areas in the plant that contain TSI material used to meet the fire barrier criteria. The areas covered by the hourly roving fire watch, and the designated route are provided in Attachments 2 and 3, respectively.

Florida Power Corporation's determination of the type of fire watch coverage was made based on the following. All of the areas containing TSI-protected safe shutdown equipment were first identified followed by a determination of the size of the conduit and cable trays routed through each area. For the purposes of establishing the fire watches, areas containing small conduit, less than four (4) inches, and/or wide cable trays, greater than fourteen (14) inches, were identified as requiring compensatory measures. The determination of which type of fire watch, hourly roving or continuous, was made based on the availability of detectors in the area. If detectors were present and operable in the area containing the TSI protected conduits or trays, an hourly roving fire watch was established. If no detectors were present and operable in the room, a continuous fire watch was posted. Conduits of four (4) inches and greater and cable trays less than or equal to fourteen (14) inches in size were not considered necessary for inclusion in the compensatory measures.

However, since the required areas were identified, it was decided that the roving watch would cover all areas containing TSI material used for safe shutdown capability since it did not adversely affect the ability of the watch to perform the hourly functions.

Measures Taken to Ensure or Restore Fire Barrier Integrity

Florida Power Corporation is continuing to review the information provided concerning the test failures of TSI material and its application at CR-3. A review of the installation information at CR-3 has shown the installation was accomplished in accordance with the manufacturer's recommendations as outlined in TSI Technical Note 20684, Rev. V, November 1985, and that additional actions were taken to ensure the integrity of the TSI material used in the plant. For example, the TSI material joints were buttered with trowel grade TSI material (both inside and outside), supports consisting of stainless steel tie wires and banding materials were installed, in many cases, every six (6) inches as opposed to the recommended twelve (12) inches, and trowel grade TSI material was installed on the outside of supports, conduits, and cable trays to encapsulate the items being protected. A typical installation included supports on one (1) inch centers around bends and additional banding on the average of every four (4) to six (6) inches for straight sections.

The combustible loading for each fire area was reviewed along with the calculated fire durations. Actions have been initiated to remove or relocate combustible material from areas where TSI is present to reduce the potential for fire initiation and to minimize fire severity and duration. In many cases, the calculated fire duration is less than the reported "failure" time for the TSI material under the tested configurations.

Restoration of the TSI fire barrier material is presently being evaluated. Appropriate actions to restore fire barrier operability are being coordinated by NUMARC. We understand this program will include establishment of a test database, development of guidance for applicability of tests, development of generic installation guidance, and consideration and coordination of additional testing as appropriate. We will support efforts to resolve the TSI fire barrier material in a timely manner, and will apply the results of these efforts, when completed, to the TSI installations within the scope of Bulletin 92-01.

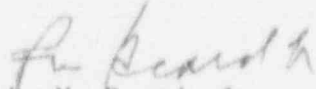
Summary

Crystal River Unit 3 has TSI fire barrier material installed and relies on the material for one and three hour protection for safe shutdown capability. Compensatory measures are in place in accordance with the facility Technical Specifications, and activities are in process to restore the fire barrier operability for safe shutdown capability. The appropriate compensatory measures will remain in effect until the TSI fire barrier operability issues are resolved. We are coordinating with NUMARC to assure the industry perspective is evaluated and to maintain consistency in our actions. Florida

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Power Corporation is in agreement with the NRC that the TSI testing failures are important issues that require immediate attention. We also agree with the staff's assessment that the relative safety significance of the fire barrier concern is low, since the TSI material still provides a measure of protection and, as stated above, the fire areas have low fuel loads, controlled ignition sources, fire detection and suppression equipment, and the facility has a trained fire brigade capable of responding quickly and efficiently to any fire emergency. We will continue to evaluate the long term actions necessary to fully restore the operability of the fire barriers in question, and will provide additional information in support of these actions in a timely manner.

Sincerely,



P. M. Beard, Jr.
Senior Vice President
Nuclear Operations

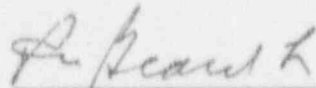
PMB/REF

Attachments

xc: Regional Administrator, Region II
NRR Project Manager
Senior Resident Inspector

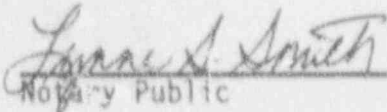
STATE OF FLORIDA
COUNTY OF CITRUS

P.M. Beard, Jr. states that he is the Senior Vice President, Nuclear Operations for Florida Power Corporation; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.



P.M. Beard, Jr.
Senior Vice President
Nuclear Operations

Subscribed and sworn to before me, a Notary Public in and for the State and County above named, this 29th day of July, 1992.



Notary Public

Notary Public, State of Florida at Large
My Commission Expires:

Notary Public, State of Florida at Large
My Commission Expires Dec. 18, 1995
Bonded thru Agent's Notary Brokerage

ATTACHMENT 1

Thermo-lag 330 Fire Barrier Material
Providing Safe Shutdown Capability
(7 pages)

FIRE ZONE INFORMATION MATRIX

FIRE ZONE	ROOM NAME	S	D	FW
AB-95-3B	NORTH HALLWAY	Y	Y	Y
AB-95-3C	WEST HALLWAY	Y	Y	Y
AB-95-3D	HALLWAY (MU VALVE ALLEY)	N	Y	Y
AB-95-3G	CENTRAL HALLWAY	Y	Y	Y
AB-95-3J	EAST HALLWAY	Y	Y	Y
AB-95-3K	AUX BLDG SUMP PUMP RM	N	Y	Y
AB-95-3W	RC WASTE TRANSFER PMP & VALVE ALLE"	N	Y	Y
AB-95-3X	NUC SERVICE BOOSTER PUMP RM	Y	Y	Y
AB-95-3Y	TRIANGLE ROOM	N	Y	Y
AB-95-3Z	SEAWATER ROOM	Y	Y	Y
AB-119-6A	NORTH HALLWAY	Y	Y	Y
AB-119-6E	EAST HALLWAY	Y	Y	Y
AB-119-6J	CENTRAL HALLWAY	Y	Y	Y
AB-119-7A	EDG CONTROL RM 3B	Y	Y	Y
IB-95-200B	MTR DRIVEN EFW PUMP ROOM	Y	Y	Y
IB-95-200C	TURB EFW PUMP PEN AREA & FAN RM	Y	Y	Y
IB-119-201A	INDUSTRIAL COOLER ROOM	Y	Y	Y
IB-119-201B	PERSONNEL ACCESS HATCH AREA	Y	Y	Y
CC-95-101A	HEALTH PHYSICS ROOM	Y	Y	Y
CC-108-102	HALLWAY AND REMOTE SHUTDOWN ROOM	Y	Y	Y
CC-108-103	PLANT BATTERY ROOM 3B	Y	Y	Y
CC-108-104	PLANT BATTERY ROOM 3A	Y	Y	Y
CC-108-105	BATTERY CHARGER ROOM 3B	Y	Y	Y
CC-108-106	BATTERY CHARGER ROOM 3A	Y	Y	Y
CC-108-107	4160 ES SWGR BUSS ROOM 3B	Y	Y	Y
CC-108-108	4160 ES SWGR BUSS ROOM 3A	Y	Y	Y
CC-108-109	INVERTER ROOM 3B	Y	Y	Y
CC-108-110	INVERTER ROOM 3A	Y	Y	Y
CC-124-111	CRD AND COMM EQPT ROOM	Y	Y	Y
CC-124-112	EFIC ROOM 1A	N	Y	Y
CC-124-114	EFIC ROOM 1D	N	Y	Y
CC-124-115	EFIC ROOM 1B	N	Y	Y
CC-124-116	480 ES SWGR BUSS ROOM 3B	N	Y	Y
CC-124-117	430 ES SWGR BUSS ROOM 3A	N	Y	Y

S= Sprinkler Coverage
D= Fire Detection Coverage
FW= Hourly Roving Fire Watch

THERMO-LAG 330 FIRE BARRIER MATERIAL
PROVIDING SAFE SHUTDOWN CAPABILITY

FIRE ZONE	CONDUITS	TSI RATING	CABLE TRAYS	TSI RATING
<u>AB-95-3B</u> NORTH HALLWAY	FWF206-3"	1 HR	TRAY 100 24" X 4"	1 HR
	MUC325-3"	3 HR	TRAY 110 24" X 6"	1 HR
	MUE66-3/4"	1 HR	TRAY 500 24" X 4"	1 HR
	MUM13-4"	1 HR	TRAY 503 12" X 4"	3 HR
	MUE170-1 1/2"	1 HR	TRAY 516 24" X 6"	1 HR
	MUE16-2"	1 HR	TRAY 622 6" X 6"	1 HR
	MUE70-1"	1 HR	TRAY 629 24" X 6"	1 HR
	MTL81-5"	1 HR	TRAY 662 18" X 6"	1 HR
<u>AB-95-3C</u> WEST HALLWAY	MTL81-5"	1 HR	NONE	
	MUC101-1"	1 HR		
	MUC102-1 1/4"	1 HR		
<u>AB-95-3D</u> HALLWAY MAKEUP VALVE ALLEY	MUC325-3"	3 HR	TRAY 503 12" X 4"	3 HR
<u>AB-95-3G</u> CENTRAL HALLWAY	MUC325-3"	3 HR	TRAY 503 24" X 4"	3 HR
	MUC101-1"	1 HR	TRAY 516 24" X 6"	1 HR
	MUC102-1 1/4"	1 HR		
	MUE1-2"	1 HR		
	MUE7-2"	1 HR		
	MUE51-2"	1 HR		
	MUE56-1 1/4"	1 HR		
	MUE66-3/4"	1 HR		
	MUM13-4"	1 HR		
	MTL81-5"	1 HR		
<u>AB-95-3J</u> EAST HALLWAY	NONE		TRAY 662 18" X 6"	1 HR
<u>AB-95-3K</u> AUX BLDG SUMP PUMP ROOM	MUC325-3"	3 HR	TRAY 503 12" X 4"	3 HR
<u>AB-95-3W</u> R.C.WASTE TRANSFER PUMP AND VALVE ALLEY	MUC403-1"	3 HR	TRAY 518 24" X 6"	3 HR
	MUC404-1 1/2"	3 HR	TRAY 522 24" X 6"	3 HR

THERMO-LAG 330 FIRE BARRIER MATERIAL
PROVIDING SAFE SHUTDOWN CAPABILITY

FIRE ZONE	CONDUITS	TSI RATING	CABLE TRAYS	TSI RATING
<u>AB-95-3X</u> NUCLEAR SERVICE BOOSTER PUMP ROOM	MUC101-1"	1 HR	TRAY 503 24" X 4"	3 HR
	MUC102-1 1/4"	1 HR	TRAY 515 6" X 4"	1 HR
	MUC325-3"	3 HR	TRAY 532 6" X 4"	1 HR
	MUC403-1"	3 HR		
	MUC404-1 1/2"	3 HR		
	MTL81-5"	1 HR		
	SWE590-1"	1 HR		
<u>AB-95-3Y</u> RCP SEAL FILTER INJECTION ROOM (TRIANGLE ROOM)	MUC325-3"	3 HR	TRAY 515 6" X 4"	3 HR
			TRAY 532 6" X 4"	3 HR
<u>AB-95-3Z</u> SEAWATER ROOM	RWM15-T-4"	1 HR	TRAY 503 24" X 4"	1 HR
	RWM26-T-4"	1 HR	TRAY 540 12" X 4"	1 HR
	SWE336-1/2"	1 HR	TRAY 541 12" X 4"	1 HR
	SWE281-1/2"	1 HR		
	SWM13-T-4"	1 HR		
<u>AB-119-6A</u> NORTH HALLWAY	AHC972-1"	1 HR	TRAY 107 24" X 6"	1 HR
	AHC973-2"	1 HR	TRAY 511 24" X 6"	1 HR
	AHE74-3"	1 HR	TRAY 108 12" X 6"	1 HR
	DPC7-T-4"	1 HR	TRAY 121 24" X 6"	1 HR
	DPC8-T-4"	1 HR	TRAY 148 24" X 6"	1 HR
	DPC9-T-4"	1 HR	TRAY 551 24" X 6"	1 HR
	DPE82-2"	1 HR	TRAY 562 24" X 6"	1 HR
	MSE107-3"	1 HR	TRAY 567 24" X 6"	1 HR
	MUE16-2"	1 HR	TRAY 575 24" X 6"	1 HR
	MUE70-1"	1 HR	TRAY 582 24" X 6"	1 HR
	MUR84-2"	1 HR	TRAY 659 24" X 6"	1 HR
	MUC255-3"	1 HR		
	RCR235-1 1/2"	1 HR		
	RCR251-1 1/2"	1 HR		
<u>AB-119-6E</u> EAST HALLWAY	DPC7-T-4"	1 HR	TRAY 551 24" X 6"	1 HR
	DPC8-T-4"	1 HR	TRAY 562 24" X 6"	1 HR
	DPC9-T-4"	1 HR	TRAY 567 24" X 6"	1 HR
	DPE82-2"	1 HR	TRAY 575 24" X 6"	1 HR
			TRAY 582 24" X 6"	1 HR
<u>AB-119-6J</u> CENTRAL HALLWAY	AHC953-3"	3 HR	NONE	
	DPE82-2"	1 HR		

THERMO-LAG 330 FIRE BARRIER MATERIAL
 PROVIDING SAFE SHUTDOWN CAPABILITY

FIRE ZONE	CONDUITS	TSI RATING	CABLE TRAYS	TSI RATING
AB-119-7A EMERG. DIESEL GEN. CONTROL ROOM 3B	DPE13-2"	1 HR	TRAY 562 12" X 6"	1 HR
CC-95-101A HEALTH PHYSICS ROOM	DPE1-3" DPE2-3"	1 HR 1 HR	NONE	
CC-108-102 HALLWAY AND REMOTE SHUTDOWN ROOM	EFE77-3" MUC336-2" MUR91-3" MUR86-3"	3 HR 3 HR 3 HR 3 HR	TRAY 616 6" X 6" TRAY 619 6" X 6" TRAY 620 6" X 6" TRAY 621 12" X 12" TRAY 623 6" X 6" TRAY 640 6" X 6" TRAY 643 18" X 6" TRAY 650 18" X 6" TRAY 651 18" X 6"	3 HR 3 HR 3 HR 3 HR 3 HR 3 HR 3 HR 3 HR 3 HR
CC-108-103 PLANT BATTERY ROOM 3B	CDR43-3" EFS31-1" EFS27-3" EFS35-1 1/2" CDR43-1 1/2" VBF90-3" VBF104-3"	3 HR 3 HR 3 HR 3 HR 3 HR 3 HR 3 HR	TRAY 631 12" X 6" TRAY 640 6" X 6"	3 HR 3 HR
CC-108-104 PLANT BATTERY ROOM 3A	EFE67-1" EGM51-3" FWC172-3" MSE83-3" VBF111-3"	3 HR 3 HR 3 HR 3 HR 3 HR	TRAY 640 6" X 6"	3 HR
CC-108-105 BATTERY CHARGER ROOM 3B	BSR26-3" DHR43-3" VBF97-3"	3 HR 3 HR 3 HR	TRAY 628 12" X 6" TRAY 629 24" X 6" TRAY 630 24" X 6" TRAY 631 12" X 6"	3 HR 3 HR 3 HR 3 HR
CC-108-106 BATTERY CHARGER ROOM 3A	EGM51-3"	3 HR	TRAY 113 12" X 6" TRAY 120 24" X 6"	3 HR 3 HR

THERMO-LAG 330 FIRE BARRIER MATERIAL
PROVIDING SAFE SHUTDOWN CAPABILITY

FIRE ZONE	CONDUITS	TSI RATING	CABLE TRAYS	TSI RATING
<u>CC-108-107</u> 4160 V E.S. SWITCHGEAR BUSS ROOM 3B	EFE74-3"	3 HR	TRAY 622 6" X 6"	3 HR
	EFE77-3"	3 HR		
	EFE78-3"	3 HR		
	EFE99-1"	3 HR		
	RCC301-3"	3 HR		
<u>CC-108-108</u> 4160 V E.S. SWITCHGEAR BUSS ROOM 3A	DPE16-3"	3 HR	TRAY 629 24" X 6"	3 HR
	DPE33-3"	3 HR		
	DPE75-3"	3 HR		
	DPE25-3"	3 HR		
	DPE26-3"	3 HR		
	DPE37-3"	3 HR		
	DPE38-3"	3 HR		
	MTM66-5"	3 HR		
	VBF111-3"	3 HR		
	EFE74-3"	3 HR		
	EFS31-1 1/2"	3 HR		
	EFE100-1"	3 HR		
	EFS32-2"	3 HR		
	EGE101-3"	3 HR		
	VBF97-3"	3 HR		
<u>CC-108-109</u> INVERTER ROOM 3B	DPE12-3"	3 HR	TRAY 101 12" X 4"	3 HR
	DPE15-3"	3 HR	TRAY 114 24" X 4"	3 HR
	DPE74-3"	3 HR		
	EFE107-1 1/2"	3 HR		
<u>CC-108-110</u> INVERTER ROOM 3A	EGM51-3"	3 HR	TRAY 103 12" X 4"	3 HR
	EGE101-3"	3 HR		
<u>CC-124-111</u> CRD/COMMUNICATIONS EQUIPMENT ROOM	CDR44-1 1/2"	3 HR	TRAY 120 24" X 6"	3 HR
	LHF20-3"	3 HR	TRAY 633 18" X 6"	3 HR
	EFE74-3"	3 HR	TRAY 643 18" X 6"	3 HR
	EFE95-1 1/2"	3 HR	TRAY 655 18" X 6"	3 HR
	EFS56-1 1/2"	3 HR		
	EFS57-1 1/2"	3 HR		
	EGM59-3"	3 HR		
	VBF3-3"	3 HR		
	MSS44-1 1/2"	3 HR		
	MSS46-1 1/2"	3 HR		
	RSF5-2"	3 HR		
	MUR91-3"	3 HR		

THERMO-LAG 330 FIRE BARRIER MATERIAL
 PROVIDING SAFE SHUTDOWN CAPABILITY

FIRE ZONE	CONDUITS	TSI RATING	CABLE TRAYS	TSI RATING
<u>CC-124-112</u> EFIC RM. A	EWC38-3/4"	3 HR	NONE	
	EWC39-3/4"	3 HR		
<u>CC-124-114</u> EFIC RM. D	ECW1-1"	3 HR	NONE	
	ECW7-1"	3 HR		
<u>CC-124-115</u> EFIC RM. B	EFE95-1 1/2"	3 HR	NONE	
<u>CC-124-116</u> 480 V E.S. SWITCHGEAR BUSS ROOM 3B	EFE95-1 1/2"	3 HR	NONE	
	MSS46-1 1/2"	3 HR		
<u>IB-95-200B</u> MOTOR DRIVEN EFW PUMP ROOM	EFE78-3"	1 HR	NONE	
	EFE95-1 1/2"	1 HR		
	EFE96-1 1/2"	1 HR		
	EFE113-3"	1 HR		
	EFM1-4"	1 HR		
	EFM4-1 1/2"	1 HR		
	EFM5-1"	1 HR		
	EFS34-1 1/2"	1 HR		
	EFS34-3"	1 HR		
<u>IB-95-200C</u> TURB. EFW PUMP PENETRATION AREA FAN ROOM	EFE75-3"	1 HR	TRAY 300 24" X 4"	1 HR
	EFE96-1 1/2"	1 HR	TRAY 302 24" X 6"	1 HR
	EFE113-3"	1 HR		
	EFS34-3"	1 HR		
	EFS44-1 1/2"	1 HR		
	EFS59-3"	1 HR		
	MSE81-2"	1 HR		
<u>IB-119-201A</u> INDUSTRIAL COOLER ROOM	EFE78-3"	1 HR	NONE	
	EFE95-1 1/2"	1 HR		
	EFE96-1 1/2"	1 HR		
	EFE108-3"	1 HR		
	EFE113-3"	1 HR		
	MSE22-3/4"	1 HR		
	MSE32-3/4"	1 HR		
	MSE42-3/4"	1 HR		
	MSE52-3/4"	1 HR		
MSE42-1 1/2"	1 HR			

THERMO-LAG 330 FIRE BARRIER MATERIAL
PROVIDING SAFE SHUTDOWN CAPABILITY

FIRE ZONE	CONDUITS	TSI RATING	CABLE TRAYS	TSI RATING
<u>IB-119-201A (CONT'D)</u> INDUSTRIAL COOLER ROOM	MSS44-1 1/2"	1 HR	NONE	
	MSS46-1 1/2"	1 HR		
	SPS120-1 1/2"	1 HR		
	SPS128-1 1/2"	1 HR		
	SPS160-3/4"	1 HR		
<u>IB-119-201B</u> PERSONNEL ACCESS HATCH AREA	CDR44-2"	1 HR	TRAY 203 24" X 6"	1 HR
	EFE78-3"	1 HR	TRAY 371 24" X 6"	1 HR
	EFE96-1 1/2"	1 HR	TRAY 302 24" X 6"	1 HR
	EFE95-1 1/2"	1 HR		
	EFE108-3"	1 HR		
	EFE113-3"	1 HR		
	EFS44-1 1/2"	1 HR		
	NIR23-3"	1 HR		
	RCH14-2"	1 HR		
	RCR251-1 1/2"	1 HR		
	SPS160-3/4"	1 HR		

ATTACHMENT 2

Thermo-lag 330 Fire Barrier Material
Protecting Small Diameter Conduit and
Wide Trays that Provide Safe Shutdown Capability
(6 pages)

THERMO-LAG 330 FIRE BARRIER MATERIAL
 PROTECTING SMALL DIAMETER CONDUIT
 AND WIDE TRAYS

SMALL CONDUIT
 (LESS THAN 4")

CONDUIT/SIZE	TSI RATING	FIRE ZONE
1/2" DIA.		
SWE281-1/2"	1 HR.	AB-95-3Z
SWE336-1/2"	1 HR.	AB-95-3Z
3/4" DIA.		
MSE22-3/4"	1 HR.	IB-119-201A
MSE32-3/4"	1 HR.	IB-119-201A
MSE42-3/4"	1 HR.	IB-119-201A
MSE52-3/4"	1 HR.	IB-119-201A
SPS160-3/4"	1 HR.	IB-119-201A
	1 HR.	IB-119-201B
ECW38-3/4"	3 HR.	CC-124-112
ECW39-3/4"	3 HR.	CC-124-112
MUE66-3/4"	1 HR.	AB-95-3B
	1 HR.	AB-95-3G
1" DIA.		
AHC972-1"	1 HR.	AB-119-6A
ECW1-1"	3 HR.	CC-124-114
ECW7-1"	3 HR.	CC-124-114
EFE100-1"	3 HR.	CC-108-108
EFF6-1"	3 HR.	CC-108-104
EFF99-1"	3 HR.	CC-108-107
EFS-1"	3 HR.	IB-95-200B
EFS31-1"	3 HR.	CC-108-103
MUC101-1"	1 HR.	AB-95-3G
	1 HR.	AB-95-3X
MUC403-1"	3 HR.	AB-95-3W
	3 HR.	AB-95-3X
MUE70-1"	1 HR.	AB-119-6A
	1 HR.	AB-95-3B
SWE590-1"	1 HR.	AB-95-3X
1 1/4" DIA.		
MUC102-1 1/4"	1 HR.	AB-95-3C
		AB-95-3G
		AB-95-3X
MUE56-1 1/4"	1 HR.	AB-95-3G

THERMO-LAG 330 FIRE BARRIER MATERIAL
 PROTECTING SMALL DIAMETER CONDUIT
 AND WIDE TRAYS

SMALL CONDUIT
 (LESS THAN 4")

CONDUIT/SIZE	TSI RATING	FIRE ZONE
1 1/2" DIA.		
CDR43-1 1/2"	3 HR.	CC-108-103
CDR44-1 1/2"	3 HR.	CC-124-111
EFE95-1 1/2"	1 HR.	IB-95-200B
	1 HR.	IB-119-201B
	1 HR.	IB-119-201A
	3 HR.	CC-124-111
	3 HR.	CC-124-115
	3 HR.	CC-124-116
EFE96-1 1/2"	1 HR.	IB-95-200B
	1 HR.	IB-95-200C
	1 HR.	IB-119-201A
	1 HR.	IB-119-201B
EFE107-1 1/2"	3 HR.	CC-108-109
EFM4-1 1/2"	1 HR.	IB-95-200B
EFS31-1 1/2"	3 HR.	CC-108-108
EFS31-1 1/2"	1 HR.	IB-95-200B
EFS35-1 1/2"	3 HR.	CC-108-103
EFS44-1 1/2"	1 HR.	IB-95-200C
	1 HR.	IB-119-201B
EFS56-1 1/2"	3 HR.	CC-124-111
EFS57-1 1/2"	3 HR.	CC-124-111
MSE42-1 1/2"	1 HR.	IB-119-201A
MSS44-1 1/2"	1 HR.	IB-119-201A
	3 HR.	CC-124-111
MSS46-1 1/2"	1 HR.	IB-119-201A
	3 HR.	CC-124-111
	3 HR.	CC-124-116
MUC404-1 1/2"	3 HR.	AB-95-3W
	3 HR.	AB-95-3X
MUE170-1 1/2"	1 HR.	AB-95-3B
RCR251-1 1/2"	1 HR.	AB-119-6A
	1 HR.	IB-119-201B
RCR235-1 1/2"	1 HR.	AB-119-6A
SPS120-1 1/2"	1 HR.	IB-119-201A
SPS128-1 1/2"	1 HR.	IB-119-201A

THERMO-LAG 330 FIRE BARRIER MATERIAL
 PROTECTING SMALL DIAMETER CONDUIT
 AND WIDE TRAYS

SMALL CONDUIT
 (LESS THAN 4")

CONDUIT/SIZE	TSI RATING	FIRE ZONE
2" DIA.		
AHC973-2"	1 HR.	AB-119-6A
CDR44-2"	1 HR.	IB-119-201B
DPE13-2"	1 HR.	AB-119-7A
DPE82-2"	1 HR.	AB-119-6A
	1 HR.	AB-119-6E
	1 HR.	AB-119-6J
EFS32-2"	3 HR.	CC-108-108
MSE81-2"	1 HR.	IB-95-200C
MUC336-2"	3 HR.	CC-108-102
MUE1-2"	1 HR.	AB-95-3G
MUE7-2"	1 HR.	AB-95-3G
MUE16-2"	1 HR.	AB-119-6
	1 HR.	AB-95-3B
MUE51-2"	1 HR.	AB-95-3G
MJR84-2"	1 HR.	AB-119-6A
PCH14-2"	1 HR.	IB-119-201B
RSF5-2"	3 HR.	CC-124-111
3" DIA.		
AHE74-3"	1 HR.	AB-119-6A
AHE953-3"	3 HR.	AB-119-6J
BSR26-3"	3 HR.	CC-108-105
CDR43-3"	3 HR.	CC-108-103
CHF20-3"	3 HR.	CC-124-111
DHR43-3"	3 HR.	CC-108-105
DPE1-3"	1 HR.	CC-95-101
DPE2-3"	1 HR.	CC-95-101A
DPE12-3"	3 HR.	CC-108-109
DPE15-3"	3 HR.	CC-108-109
DPE16-3"	3 HR.	CC-108-108
DPE25-3"	3 HR.	CC-108-108
DPE26-3"	3 HR.	CC-108-108
DPE33-3"	3 HR.	CC-108-108
DPE37-3"	3 HR.	CC-108-108
DPE38-3"	3 HR.	CC-108-108

THERMO-LAG 330 FIRE BARRIER MATERIAL
 PROTECTING SMALL DIAMETER CONDUIT
 AND WIDE TRAYS

SMALL CONDUIT
 (LESS THAN 4")

CONDUIT/SIZE	TSI RATING	FIRE ZONE
3" DIA. (CONT'D)		
DPE74-3"	3 HR.	CC-108-109
DPE75-3"	3 HR.	CC-108-108
EFE74-3"	1 HR.	IB-95-200C
	3 HR.	CC-108-107
EFE77-3"	3 HR.	CC-108-108
	3 HR.	CC-124-111
	3 HR.	CC-108-102
EFE78-3"	3 HR.	CC-108-107
	1 HR.	IB-95-200B
EFE108-3"	1 HR.	IB-119-201A
	1 HR.	IB-119-201B
	3 HR.	CC-108-107
	1 HR.	IB-119-201A
EFE113-3"	1 HR.	IB-119-201B
	1 HR.	IB-95-200B
	1 HR.	IB-95-200C
EGE101-3"	1 HR.	IB-119-201A
	1 HR.	IB-119-201B
	3 HR.	CC-108-108
	3 HR.	CC-108-110
EFS27-3"	3 HR.	CC-108-103
EFS34-3"	1 HR.	IB-95-200B
	1 HR.	IB-95-200C
EFS59-3"	1 HR.	IB-95-200C
EGM59-3"	3 HR.	CC-124-111
EGM51-3"	3 HR.	CC-108-104
	3 HR.	CC-108-106
	3 HR.	CC-108-110
FWC172-3"	3 HR.	CC-108-104
FWF206-3"	1 HR.	AB-95-3B
MSE83-3"	3 HR.	CC-108-104
MSE107-3"	1 HR.	AB-119-6A
MUC255-3"	1 HR.	AB-119-6A
MUC325-3"	3 HR.	AB-95-3B
	3 HR.	AB-95-3D
	3 HR.	AB-95-3G
	3 HR.	AB-95-3K
	3 HR.	AB-95-3X
	3 HR.	AB-95-3Y

THERMO-LAG 330 FIRE BARRIER MATERIAL
PROTECTING SMALL DIAMETER CONDUIT
AND WIDE TRAYS

SMALL CONDUIT
(LESS THAN 4")

CONDUIT/SIZE	TSI RATING	FIRE ZONE
3" DIA. (CONT'D)		
MUR86-3"	3 HR.	CC-108-102
MUR91-3"	3 HR.	CC-108-102
	3 HR.	CC-124-111
NIR23-3"	1 HR.	IB-119-201B
RCC301-3"	3 HR.	CC-108-107
VBF3-3"	3 HR.	CC-124-111
VBF90-3"	3 HR.	CC-108-103
VBF97-3"	3 HR.	CC-108-105
	3 HR.	CC-108-108
VBF104-3"	3 HR.	CC-108-103
VBF111-3"	3 HR.	CC-108-104
	3 HR.	CC-108-108

WIDE CABLE TRAYS
(GREATER THAN 14")

CABLE TRAY/SIZE	TSI RATING	FIRE ZONE
18" DIA.		
TRAY 662 18" X 6"	1 HR.	AB-95-3B
	1 HR.	AB-95-3J
TRAY 643 18" X 6"	3 HR.	CC-108-102
	3 HR.	CC-124-111
TRAY 650 18" X 6"	3 HR.	CC-108-102
TRAY 651 18" X 6"	3 HR.	CC-108-102
TRAY 633 18" X 6"	3 HR.	CC-124-111
TRAY 655 18" X 6"	3 HR.	CC-124-111
24" DIA.		
TRAY 100 24" X 4"	1 HR.	AB-95-3B
TRAY 500 24" X 4"	1 HR.	AB-95-3B
TRAY 503 24" X 4"	3 HR.	AB-95-3G
	3 HR.	AB-95-3X
	1 HR.	AB-95-3G
	1 HR.	AB-93-3X
	1 HR.	AB-95-3Z

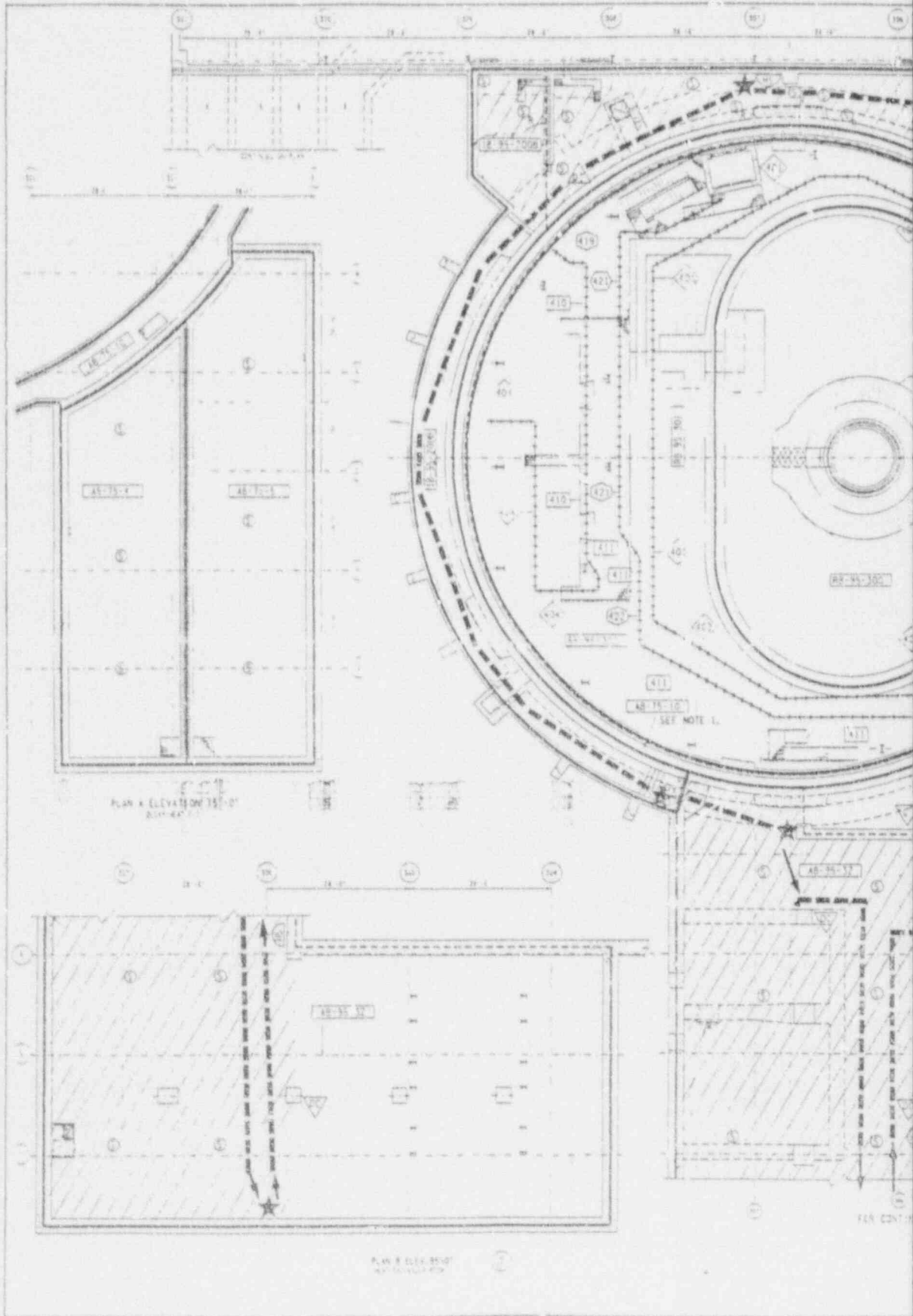
THERMO-LAG 330 FIRE BARRIER MATERIAL
PROTECTING SMALL DIAMETER CONDUIT
AND WIDE TRAYS

WIDE CABLE TRAYS
(GREATER THAN 14")

CABLE TRAY/SIZE	TSI RATING	FIRE ZONE
24" DIA. (CON'T'D)		
TRAY 114 24" X 4"	3 HR.	CC-108-109
TRAY 300 24" X 4"	1 HR.	IB-95-200C
TRAY 110 24" X 6"	1 HR.	AB-95-3B
TRAY 516 24" X 6"	1 HR.	AB-95-3B
	1 HR.	AB-95-3G
TRAY 629 24" X 5"	1 HR.	AB-95-3B
	3 HR.	CC-108-105
	3 HR.	CC-108-108
TRAY 518 24" X 6"	3 HR.	AB-95-3W
TRAY 522 24" X 6"	3 HR.	AC-95-3W
TRAY 107 24" X 6"	1 HR.	AB-119-6A
TRAY 511 24" X 6"	1 HR.	AB-119-6A
TRAY 121 24" X 6"	1 HR.	AB-119-6A
TRAY 148 24" X 6"	1 HR.	AB-119-6A
TRAY 551 24" X 6"	1 HR.	AB-119-6A
	1 HR.	AB-119-6E
TRAY 567 24" X 6"	1 HR.	AB-119-6A
	1 HR.	AB-119-6E
TRAY 562 24" X 6"	1 HR.	AB-119-6A
	1 HR.	AB-119-6E
TRAY 575 24" X 6"	1 HR.	AB-119-6A
	1 HR.	AB-119-6E
TRAY 582 24" X 6"	1 HR.	AB-119-6A
	1 HR.	AB-119-6E
TRAY 659 24" X 6"	1 HR.	AB-119-6A
TRAY 629 24" X 6"	3 HR.	CC-108-105
TRAY 120 24" X 6"	3 HR.	CC-108-106
	3 HR.	CC-124-111
TRAY 302 24" X 6"	1 HR.	IB-95-200C
	1 HR.	IB-119-201B
TRAY 203 24" X 6"	1 HR.	IB-119-201B
TRAY 371 24" X 6"	1 HR.	IB-119-201B

ATTACHMENT 3

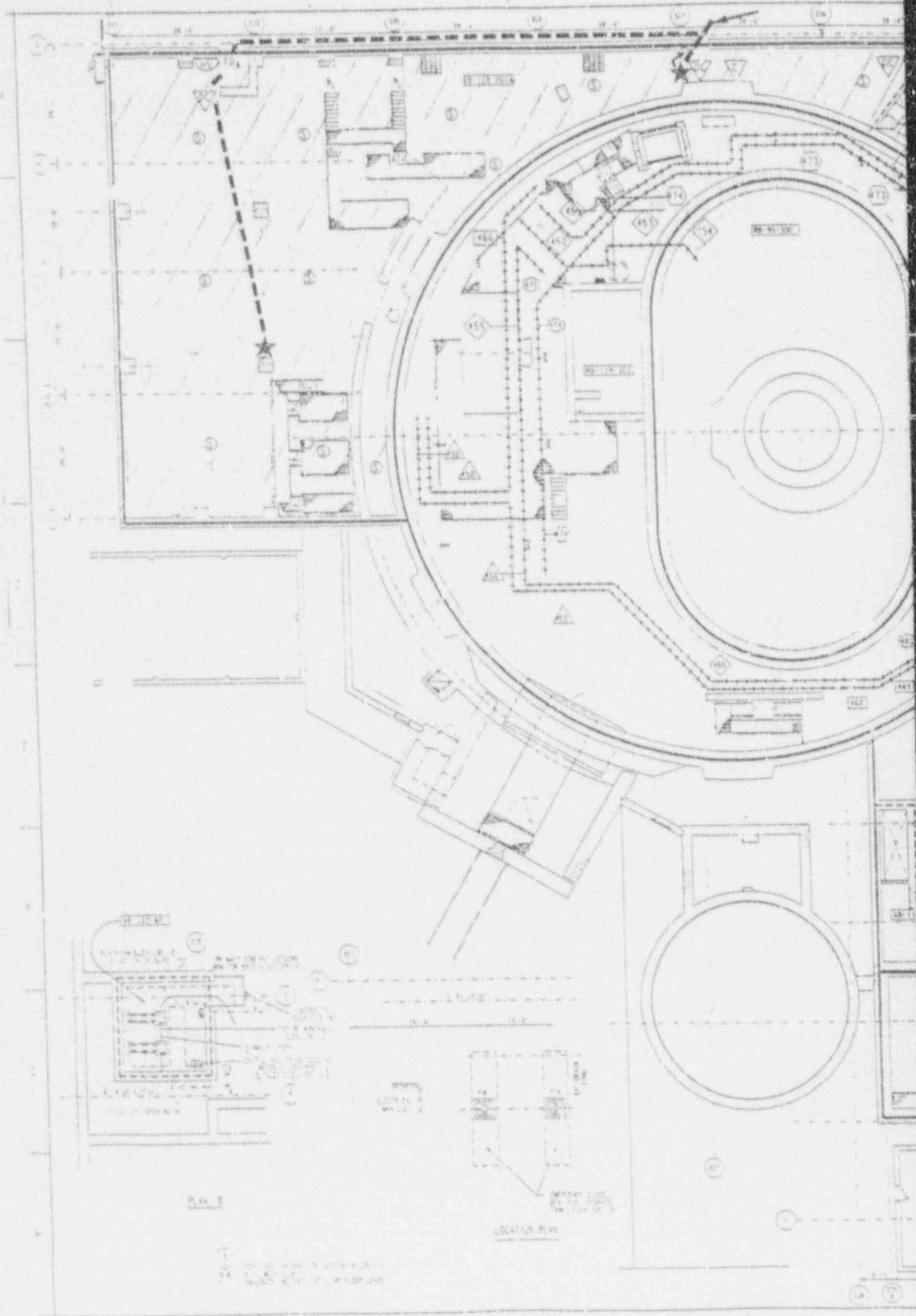
Crystal River Unit 3
General Floor Plan
(3 pages)



PLAN & ELEVATION 15'-0"
 1/4" = 1'-0"

PLAN & ELEVATION 15'-0"
 1/4" = 1'-0"

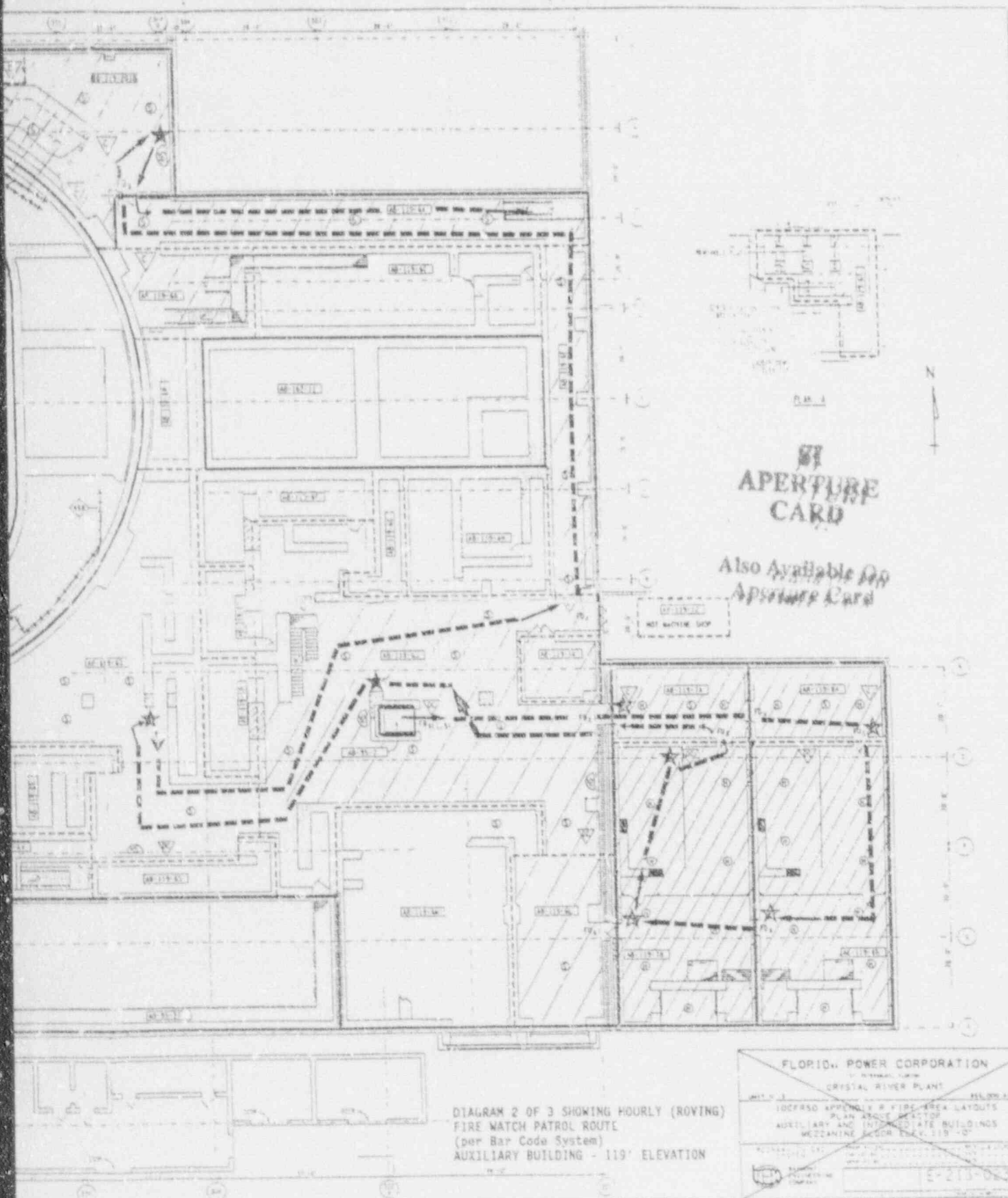
FOR CONT.



PLAN 1

LOCATION PLAN

ARCHITECTURAL FLOOR PLAN
DRAWN BY: [Illegible]
DATE: [Illegible]



APERTURE CARD

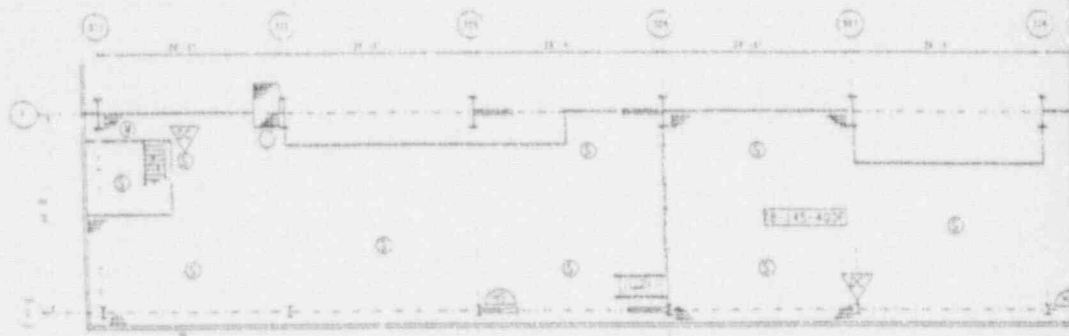
Also Available on Aperture Card

DIAGRAM 2 OF 3 SHOWING HOURLY (ROVING) FIRE WATCH PATROL ROUTE (per Bar Code System) AUXILIARY BUILDING - 119' ELEVATION

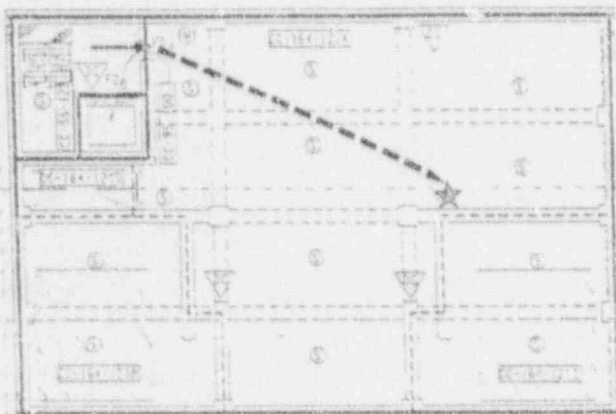
FLORIDA POWER CORPORATION	
CRYSTAL RIVER PLANT	
100FRSD APERTURE CARD FIRE AREA LAYOUTS	PLAN ABOVE FACTOR
AUXILIARY AND INTERMEDIATE BUILDINGS	
MEZZANINE LEVEL ELEV. 119'-0"	
E-213-001 4	

9208030283-02

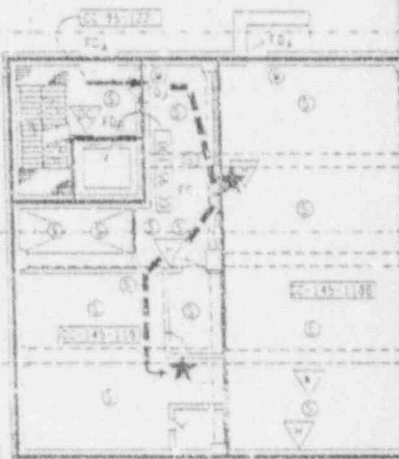
10. 11. 12.



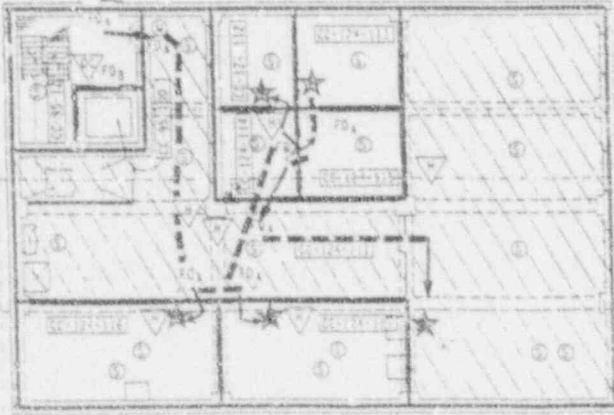
PLAN - PLATFORM EL. 164'-0" & 170'-0" (A 100 PSE)



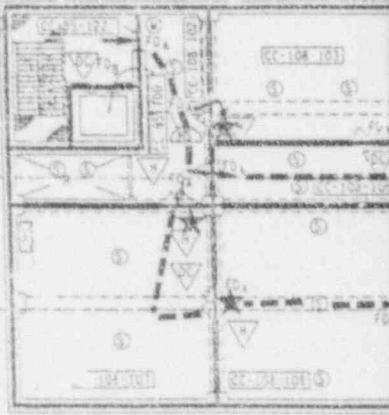
PLAN - EL. 134'-0" (A 100 PSE)



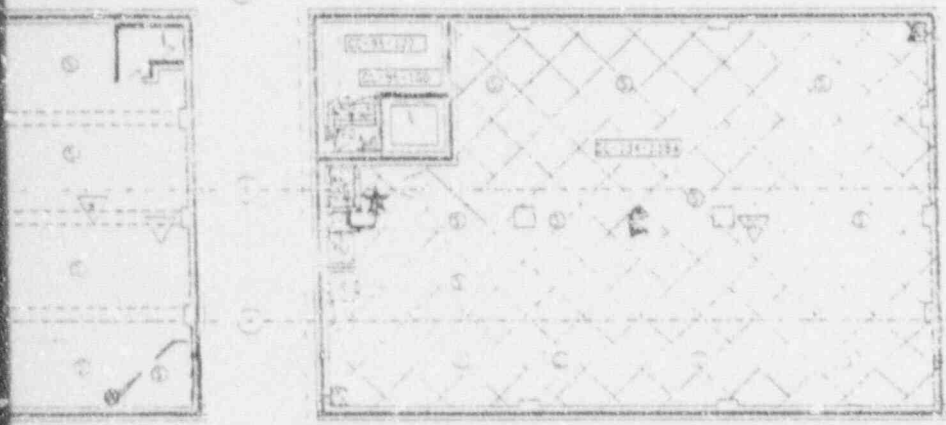
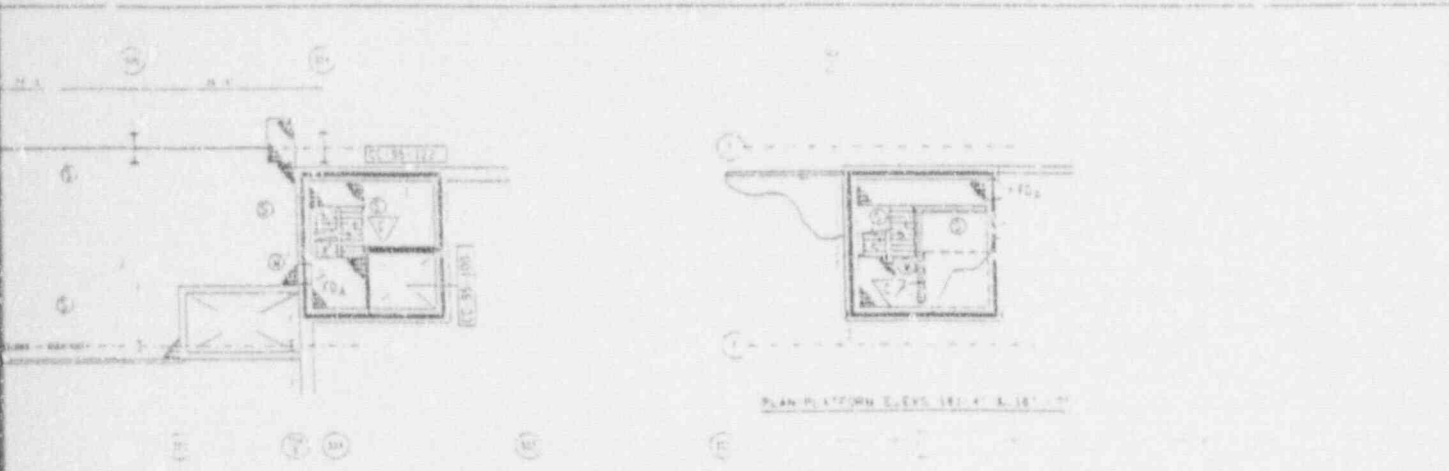
PLAN - EL. 145'-0" (A 100 PSE)



PLAN - EL. 124'-0" (A 100 PSE)

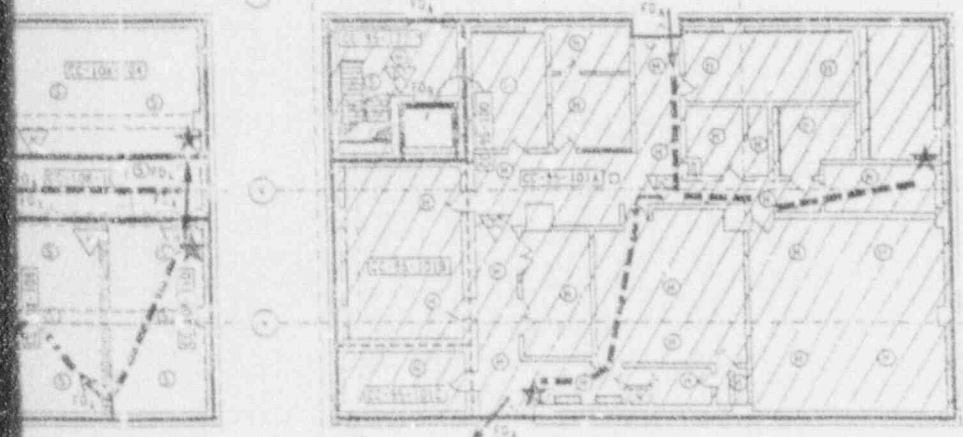


PLAN - EL. 104'-0" (A 100 PSE)



**SI
APERTURE
CARD**

Also Available On
Aperture Card



FIRE AREAS, ZONES AND SPINKLETT COVERAGE

DIAGRAM 3 OF 3 SHOWING HOURLY (ROVING)
FIRE WATCH PATROL ROUTE
(per Bar Code System)
CONTROL COMPLEX - ALL ELEVATIONS

REVISED P.W. NO. 41-41a	DATE	BY
FLORIDA POWER CORPORATION		
CENTRAL RIVER PLANT		
TWO-FLOOR APERTURE CARD LAYOUTS		
PLAN ABOVE HEATER ROOM ELEV. 144'-0"		
ELEVATIONS 95'-0" TO 181'-0"		
CONTROL COMPLEX		
ELEVATIONS 95'-0" TO 181'-0"		
DRAWN BY: [Signature]		
CHECKED BY: [Signature]		
DATE: 2-21-68		

9208030283-03