NUREG/CR-5308
PARAMETER IE-199

Closeout of IE Bulletin 80–15: Possible Loss of Emergency Notification System (ENS) with Loss of Offsite Power

Prepared by
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PARAMETER, Inc.

Prepared for
U.S. Nuclear Regulatory Commission

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NUREG/CR-5308
PARAMETER IE-199

Closeout of IE Bulletin 80–15: Possible Loss of Emergency Notification System (ENS) with Loss of Offsite Power

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Washington, DC 20555
NRC FIN B8729

ABSTRACT

Documentation is provided in this report for the closeout of IE Bulletin 80-15 for nuclear power reactors. This bulletin pertained to a possible loss of the Emergency Notification System (ENS) upon loss of offsite power. Closeout is based on the implementation and verification of six (6) required actions by licensees of nuclear power reactors in operation or near to receiving an operating license when the bulletin was issued on June 18, 1980. Evaluation of utility responses and NRC/Region inspection reports indicates that the bulletin is closed for all of the 69 nuclear power reactors to which it was issued for action and which were not shut down indefinitely or permanently at the time of issuance of this report. Background information is supplied in the Introduction and Appendix A. Nuclear fuel facilities as well as nuclear power facilities were identified in the enclosures to the bulletin. However, per an NRC memorandum, the closeout of the bulletin for nuclear fuel facilities is not within the scope of this report.

TABLE OF CONTENTS

CLOSEOUT OF IE BULLETIN 80-15: POSSIBLE LOSS OF EMERGENCY NOTIFICATION SYSTEM (ENS) WITH LOSS OF OFFSITE POWER

INTRODUCTION

This report provides documentation for the closeout of IE Bulletin 80-15 for nuclear power reactors in accordance with the Statement of Work in Task Order 37 under NRC Contract 05-85-157-02. Documentation is based on records obtained from the NRC Document Control System.

Fuel facilities receiving the bulletin for action are not included in this review. Responsibility for tracking bulletin status for these facilities rests with NRC's Office of Nuclear Materials Safety and Safeguards (NMSS).

The Bulletin was issued on June 18, 1980, to all licensees of nuclear power and nuclear fuel facilities in operation or near to receiving an operating license. The concern was based on losses of the Emergency Notification System (ENS) at Davis-Besse 1 and Indian Point 2. Davis-Besse 1 used on-site power and Indian Point 2 used power supplied by the local telephone company.

Information Notice 85-77 was issued on September 20, 1985, to alert licensees to the possibility that modifications (such as changing to fiber optics or interrupting offsite power for maintenance activities without adequate review) may increase the vulnerability of the ENS.

Copies of IE Bulletin 80-15, IE Circular 80-09, IE Information Notice 84-42, and IE Information Notice 85-77 are included in Appendix A of this report for presentation of background information. Utility responses and NRC/Region inspection reports are documented in Table B.1 as the basis for bulletin closeout. Utility manhours expended on the bulletin are listed in Appendix C. Abbreviations used in this report and associated documents are listed in Appendix D.

SUMMARY

1. The bulletin is closed for the following 33 facilities per Criterion 1 (see page B-7):

Beaver Valley 1	Nine Mile Point 1	San Onofre 1
Big Rock Point 1	North Anna 1,2	Sequoyah 1
Browns Ferry 1,2,3	Palisades	St. Lucie 1
Calvert Cliffs 1,2	Peach Bottom 2,3	Surry 1,2
Davis-Besse 1	Pilgrim 1	Trojan
Dresden 2,3	Prairie Island 1,2	Vermont Yankee 1
Indian Point 2	Robinson 2	Zion 1,2
Maine Yankee	Salem 1,2	

2. The bulletin is closed for the following 35 facilities per Criterion 2 (see page B-7):

Arkansas 1,2	FitzPatrick	Monticello
Brunswick 1,2	Fort Calhoun 1	Oconee 1,2,3
Cook 1,2	Ginna	Oyster Creek 1
Cooper Station	Haddam Neck	Point Beach 1,2
Crystal River 3	Hatch 1,2	Quad Cities 1,2
Diablo Canyon 1,2	Indian Point 3	Rancho Seco 1
Duane Arnold	Kewaunee	Turkey Point 3,4
Farley 1	Millstone 1,2	Yankee-Rowe 1

3. The bulletin is closed for the following three facilities per notes 3 and 6 (see page B-7):

McGuire 1	Summer 1	TMI 1

4. The bulletin is closed for all 69 facilities. Note: McGuire 1 and Summer 1 are not included in the list of 69 OLs and NTOLs affected by this bulletin. See Note 3 on page B-7.

5. For the revised tables of facilities using telephone company or on-site power, see tables B.2 and B.3 on pages B-8 and B-9.

6. Because they are shut down indefinitely or permanently (SDI), the following six (6) facilities are excluded from Table B.1:

Dresden 1	Humboldt Bay 3	La Crosse
Fort St. Vrain	Indian Point 1	TMI 2

7. Occurrences at Davis-Besse 1 and Indian Point 2 led to issuance of Bulletin 80-15. Occurrences at Palisades and Quad Cities 1,2 led to issuance of Information Notice 85-77. All five of these facilities have closed bulletin status.

CONCLUSIONS

The concerns of the bulletin have been met.

ADDITIONAL AREAS OF CONCERN

Additional areas of concern beyond the scope of the bulletin are presented in Information Notices (INs) 84-42, and 85-77 (see pages A-7 through A-12).

APPENDIX A

Background Information and Required Actions

Note: For actions required of the utilities, see pages A-1 and A-2.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

SSINS No.: 6820
Accessions No.:
8005050072

POSSIBLE LOSS OF EMERGENCY NOTIFICATION SYSTEM (ENS) WITH LOSS OF OFFSITE POWER

In the past year, there have been two occurrences where a loss of off-site power has resulted in a loss of communications between a power reactor facility and the NRC Operations Center via the Emergency Notification System (ENS). The most recent occurrence was at Indian Point Unit 2 on June 3, 1980. The earlier event occurred at the Davis Besse facility on October 15, 1979 and resulted in the issuance of IE Circular 80-09.

The installation of the ENS requires a station package which operates on 110 VAC. In some cases, the station package is located at the local telephone company which supplies the required power for normal operation and emergency power for operation during abnormal occurrences, but in many cases, the package is located at the site and is served by on-site power. In some cases where the station package is served by on-site power, the station package has not been backed up by emergency power.

NRC data indicates that the station packages for each facility are powered in the manner described in the two enclosures.

Actions to be taken by all licensees:

1. Within 10 days of the date of this Bulletin, verify by direct inspection, in conjunction with the appropriate telephone company representative, that the ENS at your facility is powered in the manner described in the two enclosures.

2. Those facilities which have station packages requiring on-site power, but which are not connected to a safeguards instrumentation bus which is backed up by batteries and an inverter or equally reliable power supply, shall make necessary modifications and provide such a connection.

3. All facilities are to develop and conduct a test, within 60 days of the issuance of this Bulletin, to verify that all extensions of the ENS located at your facility(ies) would remain fully operable from the facility(ies) to the NRC Operations Center in the event of a loss of offsite power to your facility(ies). This is not intended to mean that an actual loss of offsite power be executed.

4. If it is determined that a station package requiring on-site power is not connected to a safeguards instrumentation bus backed up by automatic transfer to batteries and an inverter or an equally reliable power supply, notify the NRC Operations Center via the ENS within 24 hours after such determination.

5. Prepare and issue an administrative procedure or directive which requires notification to the NRC Operations Center by commercial telephone or relayed message within one hour of the time that one or more extensions of the ENS located at your facility(ies) is subsequently found to be inoperable for any reason.

6. Provide a written report, within 75 days of the issuance of this Bulletin, describing the result of the reviews required by items 1 and 2 above, the results of the testing required by item 3 and the procedures required by item 5.

This information is requested under the provisions of 10 CFR 50.54(f). Accordingly, you are requested to provide within the time periods specified in item 6 above, written statements of the above information, signed under oath or affirmation.

Reports shall be submitted to the Director of the appropriate NRC Regional Office and a copy forwarded to the Director, NRC Office of Inspection and Enforcement, Washington, D.C. 20555.

Approved by GAO, B180225 (R0072): clearance expires 7-31-80. Approval was given under a blanket clearance specifically for identified generic problems.

Enclosures:
1. Facilities With "Hotline" Powered By Local Telephone Company
2. Facilities With "Hotline" Using On-Site Power

Facilities With "Hotline" Powered By Local Telephone Company

Region I

B&W Leechburg/Apollo
Beaver Valley 1
Calvert Cliffs 1 & 2
Fitzpatrick
Ginna
Indian Point 2
Indian Point 3
Millstone 1 & 2
NFS-West Valley
Nine Mile Point 1
Three Mile Island 1 & 2
TI-Attleboro
Westinghouse Cheswick

Region II

Hatch 1 & 2
NFS-Erwin

Region III

Cook 1 & 2
Dresden 1, 2 & 3
Duane Arnold
Kerr McGee Cresent
La Crosse
Monticello
Palisades
Point Beach 1 & 2
Quad Cities 1 & 2

Region V

Exxon Richland
General Atomics LaJolla
Rockwell Canoga Park
San Onofre
Trojan

Enclosure 1

Facilities With "Hotline" Using On-Site Power

Region I

Haddam Neck
Maine Yankee
Oyster Creek
Peach Bottom 2 & 3
Pilgrim 1
Salem 1 & 2
UNC-Montville
UNC-Wood River Junction
Vermont Yankee
Yankee Rowe

Region II

B&W LRC-Lynchburg
B&W Navy-Lynchburg
Browns Ferry 1, 2 & 3
Brunswick 1 & 2
Crystal River
Farley 1
North Anna 1 & 2
Oconee 1, 2 & 3
Robinson 2
Sequoyah 1
St. Lucie 1
Surry 1 & 2
Turkey Point 3 & 4

Region III

Big Rock Point
Davis-Besse
Kewaunee
Prairie Island 1 & 2
Zion 1 & 2

Region IV

Arkansas Nuclear One, 1 & 2
Cooper
Fort Calhoun
Fort St. Vrain

Region V

Diablo Canyon
Rancho Seco

Enclosure 2

SSINS No.: 6830
Accession No.:
8002280663

IE CIRCULAR 80-09

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

April 28, 1980

IE Circular No. 80-09

PROBLEMS WITH PLANT INTERNAL COMMUNICATIONS SYSTEMS

Description of Circumstances at the Kewaunee Power Plant:

On January 17, 1980, the Kewaunee Nuclear Power Plant lost offsite power to its 4160V non-safeguards buses. Since the system used for internal communications, paging and evacuation alarm purposes (Gai-tronics) was powered from a non-safeguards bus, plant communications were degraded during the outage. This degraded condition persisted until power was restored to the affected bus thru an emergency safeguards bus. While in the degraded mode, the licensee used two-way portable radios for internal communications. The radios performed satisfactorily, per se; however, when transmitting in the vicinity of certain electronic equipment, they induced false signals into the electronic equipment.

Description of Circumstances at the Davis-Besse Power Station:

On October 15, 1979, the Davis-Besse Power Station lost all offsite power. During the period when offsite power was not available, the licensee noted that the internal three digit telephones (GTE) would not function. In addition, the NRC "Red Phone" was subsequently reported to have been out of service. Other licensee phone systems (Gai-tronics and the outside four digit Ohio Bell phones) did work.

Following this event, the licensee provided emergency power to its phones and the NRC took action through AT&T to provide emergency power to all Red Phones. (Note: Although the communications system at Davis-Besse was not designed to meet the single failure criterion, its FSAR states that the main internal communications system is supplied by two redundant power feeders from the uninterruptable instrumentation distribution panels.)

RECOMMENDED ACTION FOR LICENSEES AND HOLDERS OF CONSTRUCTION PERMITS

All licensees of nuclear power reactors and holders of construction permits should be aware of the potential problems described above. Because of the generic implications of the above problems, it is recommended that the following actions be considered:

1. Determine the source of power for plant internal communications systems;

2. Upgrade the internal communications systems to assure operability during the loss of offsite power or other foreseeable events;

3. Determine whether any plant electronic equipment may be adversely affected by portable radio transmissions. This determination should include, but not be limited to, the computer system, electro-hydraulic system, and nuclear instrumentation system; and

4. Instruct employees on the use of radios in areas susceptible to electromagnetic interference.

No written response to this Circular is required; however, if additional information regarding these matters is required, contact the Director of the appropriate NRC Regional Office.

IE INFORMATION NOTICE 84-42

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, DC 20555

June 5, 1984

IE INFORMATION NOTICE NO. 84-42: EQUIPMENT AVAILABILITY FOR CONDITIONS DURING OUTAGES NOT COVERED BY TECHNICAL SPECIFICATIONS

Addressees:

All holders of a nuclear power plant operating license (OL) or construction permit (CP).

Purpose:

This information notice is provided to alert licensees to the importance of controlling equipment availability for conditions during outages not covered by Technical Specifications. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude similar problems occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements and, therefore, no specific action or written response is required.

Description of Circumstances:

On January 8, 1984, the Palisades Nuclear Plant experienced a complete loss of offsite and onsite ac power. The event was precipitated by the need to isolate a faulty switchyard breaker. To isolate the breaker, it was necessary to interrupt the offsite power supply to the plant. At the time of the event, Palisades was in a refueling outage with all fuel removed from the reactor and the no. 2 diesel generator (DG) inoperable. The service water pump powered from the no. 1 (operable) DG also was inoperable as a result of maintenance.

When the shift supervisor interrupted the offsite power supply to the plant, the operators did not realize cooling water to the operable DG was not available. The control room alarm indication, which should have warned the operators, was apparently masked by the large number of simultaneous alarms received when the offsite power was interrupted. Approximately 50 minutes later the DG overheated and was manually tripped. Once the DG was tripped, all station power was lost, with the exception of the station batteries and their associated dc and preferred ac buses. The loss of ac power caused a loss of plant communications, fire protection, security, and habitability systems as well as the fuel pool cooling system. (Compensatory measures were promptly taken upon loss of the normal security systems.) The loss of communications is considered the most serious consequence of this event. This loss of communications will be further addressed in a separate information

notice (IN). The restoration of ac power was delayed as a result of an inoperable main transformer (out for maintenance) and a malfunction of one of the startup supply breakers.

While operating procedures required two operable diesel generators before removing offsite power, operating procedures did not specifically delineate equipment availability requirements for this defueled condition. The shift supervisor violated the procedure and proceeded with the evolution after evaluating fuel cooling. The fuel pool was known to heat up very slowly and to require days without active cooling before the high temperature alarm would be reached. The shift supervisor, however, failed to fully recognize the importance of the other support systems (e.g., communication, fire protection) to the overall safety of the plant. The procedural requirements were reviewed as part of the evaluation of fuel cooling and it was determined their intent was to minimize risk to fuel integrity when the fuel was in the reactor vessel.

Following the loss of onsite and offsite ac power, the Emergency Procedures were not implemented in a timely manner because the importance of the various support systems had not been recognized.

The licensee initiated many corrective actions as a result of this event (see Palisades Licensee Event Report (LER) 84-001). Some of the more important corrective actions by the licensee include:

1. A review of the management control of equipment for plant conditions not covered by the requirements of the Technical Specifications. The review will specifically address electrical system requirements during cold shutdown to ensure sufficient equipment remains available to maintain the plant in a safe condition and to meet the commitments of the Site Emergency, Security, and Fire Protection Plans.

2. Establishing minimum equipment availability for specific conditions not covered by the Technical Specifications.

3. Provide classroom training for all operators on the use and intent of the Site Emergency Plan.

4. Integrate the use of the Site Emergency Plan into simulator training.

5. Discuss the need for strict adherence to operating procedures with all operations personnel.

NRC has previously identified concerns with operability of required equipment in IE IN 83-56, "Operability of Required Auxiliary Equipment," and IN 80-20, "Loss of Decay Heat Removal Capability at Davis-Besse Unit 1 While in a Refueling Mode." If you have any questions regarding this matter, please

contact the Regional Administrator of the apporopriate NRC Regional Office or this office.

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contact: H. Bailey, IE
(301) 492-7078

Attachment:
List of Recently Issued IE Information Notices

SSINS No. 6835
IN 85-77

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

September 20, 1985

INFORMATION NOTICE NO. 85-77: POSSIBLE LOSS OF EMERGENCY NOTIFICATION SYSTEM DUE TO LOSS OF AC POWER

Addressees:

All holders of a nuclear power plant operating license (OL) or a construction permit (CP).

Purpose:

This information notice is provided to alert licensees to the possibility that modifications to plant telephone systems may result in a change in the vulnerability of the Emergency Notification System (ENS) and other plant telephones to losses of ac power. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude similar problems occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

On January 8, 1984, the Palisades Nuclear Plant interrupted its offsite power supply for maintenance activities. Subsequently all ac power from the emergency diesel generators was lost. (This event is described in detail in Information Notice No. 84-42.) As a result of the ac power problems, all onsite telephones were considered inoperable for approximately 3 hours, except for two offsite-powered pay telephones. Loss of the ENS and normal communications significantly hampered the notification process.

On May 7, 1985, Quad Cities Unit 1 was operating at 90% power. The Unit 2 auxiliary transformer was inadvertently shorted while the unit was shut down with its associated emergency diesel generator out for maintenance. This caused the loss of offsite ac power to Unit 2 and a voltage transient in Unit 1 that subsequently caused that unit to scram about 15 minutes later. Unit 1 retained offsite ac power. One division of Unit 2 was promptly powered by autostart of the swing emergency diesel generator, and the other division was powered within about 20 minutes by crosstie to a 4kV bus of Unit 1. When the licensee attempted to notify the NRC Emergency Operations Center over the ENS, the circuit repeatedly disconnected. The Quad Cities plant also was unable to receive incoming calls from the NRC over commercial telephone lines.

These incidents indicate that the provisions of IE Bulletin 80-15 were not maintained at the affected facilities at the times of the events. The bulletin required verification that all ENS station packages that use onsite ac power were connected to a safeguards instrumentation bus backed up by automatic transfer to batteries and an inverter or an equally reliable power source. At the time the bulletin was issued, both plants had ENS packages that were powered by the local telephone company, making them independent of ac power sources at the plant sites.

Discussion:

The installation of the ENS requires a station package that operates on 110 Vac. In some cases, the station package is located at the local telephone company which supplies the required power for normal operation and emergency power for operation during abnormal situations. However, in many cases, the ENS package is located at the site and is served by ac power provided by the plant.

Earlier incidents involving loss of offsite power led to losses of emergency notification capabilities at the Davis-Besse facility on October 15, 1979, and at the Indian Point Unit 2 on June 3, 1980. These incidents prompted the issuance of IE Circular 80-09 and IE Bulletin 80-15. The bulletin contained a list of those stations with ENS packages powered by the telephone company and a list of those stations with ENS packages powered at the plant site. At that time, both the Palisades plant and the Quad Cities plant had ENS packages with power supplies provided by the telephone company.

Subsequent changes to provide additional circuits in the telephone system at the Palisades plant resulted in the ENS and commercial telephone system packages being powered at the plant site. Power was supplied from a bus supported by an emergency diesel generator. However, the modification was not controlled within the licensee's formal modification process and was thus completed without formal review. The modified ENS power supply was not backed by batteries and an inverter, as previously provided by Bulletin 80-15, and was not independent of the station's commercial telephone service as reflected in the licensee's Emergency Plan.

During the incident at Palisades on January 8, 1984, the unit was intentionally powered from a single emergency diesel generator on the 1C 2400-V bus to allow isolation of a faulty switchyard breaker. The unit was defueled, and the other diesel was inoperable due to maintenance. When the running diesel subsequently overheated and tripped, the station was without ac power with the exception of preferred ac. Although some other buses were repowered by offsite ac within an hour, difficulties in closing the breakers to the 1C and 1E 2400-V buses resulted in the extended loss of all telephones except for two pay telephones powered by the telephone company. The 1E bus was repowered after about 3 hours by successfully closing the breaker to the offsite source. This provided partial restoration of the telephone service. However, the ENS telephones on the 1C bus were not restored for 6 hours, when they were finally jumpered to an energized source.

At the Quad Cities plant, the local telephone company abandoned the copper wire cables that were in use in 1980 and installed a fiber optics communications system in its place. Because the fiber optics cable does not provide for electrical power transmission, the fiber optics package at the plant had to be provided with an onsite power source. Similarly, the site package for the ENS had to be shifted to onsite power. The licensee powered the fiber optics package from an instrument bus in Unit 2 and the ENS from an instrument bus in Unit 1. These buses are supported by emergency diesel generators, but the power supplies to the communications packages are not backed up by batteries and an inverter in accordance with Bulletin 80-15.

During the event on May 7, 1985, when the Unit 2 instrument bus powering the fiber optics package lost power, both the ENS and normal PBX telephones became inoperable. The Unit 1 bus supporting the ENS package remained powered by an offsite ac source through the switchyard, but could not communicate through the unpowered fiber optics system. Once power was restored to the Unit 2 bus through a crosstie, the ENS circuit repeatedly disconnected as the licensee attempted to make emergency notifications.

These events illustrate the need for careful review of changes to plant telephone equipment to ensure that the reliability of the ENS is not compromised. In those cases where offsite communications power that is supplied by the telephone company is replaced by an onsite power source, it is important to consider the reliability of the power sources for all segments of the ENS transmission path. Those plants that already supply the ENS from an onsite safeguards instrumentation bus should be aware that the introduction of a fiber optics connection by the local telephone company still may compromise the ENS if the plant-end fiber optics package is not similarly powered.

No specific action or written response is required by this information notice. If you have any questions regarding this matter, please contact the Regional Administrator of the appropriate NRC regional office or this office.

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contacts: S. Long, IE
(301) 492-7159

R. Priebe, IE
(301) 492-4333

Attachment: List of Recently Issued IE Information Notices

APPENDIX B

Documentation of Bulletin Closeout For Nuclear Power Facilities

TABLE B.1 BULLETIN CLOSEOUT STATUS FOR NUCLEAR POWER FACILITIES

Facility	Utility	Docket	Facility Status 06-18-80 (1)	NRC Region	NSSS	Utility Response Date	Inspection Report and Date	Closeout Status and Criterion (2)
Arkansas 1	AP&L	50-313	OL	IV	B&W	09-03-80 10-22-80	80-17(10-31-80)	Closed 2
Arkansas 2	AP&L	50-368	OL	IV	C-E	09-03-80 10-22-80	80-17(10-31-80)	Closed 2
Beaver Valley 1	DLC	50-334	OL	I	W	09-11-80	81-28(01-07-82) 82-13(07-20-82)	Closed 1
Big Rock Point 1	CPC	50-155	OL	III	GE	09-02-80	80-10(09-25-80)	Closed 1
Browns Ferry 1	TVA	50-259	OL	II	GE	08-29-80 03-03-81 06-10-81	81-18(08-10-81)	Closed 1
Browns Ferry 2	TVA	50-260	OL	II	GE	08-29-80 03-03-81 06-10-81	81-18(08-10-81)	Closed 1
Browns Ferry 3	TVA	50-296	OL	II	GE	08-29-80 03-03-81 06-10-81	81-18(08-10-81)	Closed 1
Brunswick 1	CP&L	50-325	OL	II	GE	08-27-80 11-06-80 08-24-81	80-35(09-24-80)	Closed 2
Brunswick 2	CP&L	50-324	OL	II	GE	08-27-80 11-06-80 08-24-81	80-32(09-24-80)	Closed 2
Calvert Cliffs 1	BG&E	50-317	OL	I	C-E	08-21-80 10-31-80	81-02(03-10-81)	Closed 1
Calvert Cliffs 2	BG&E	50-318	OL	I	C-E	08-21-80 10-31-80	81-02(03-10-81)	Closed 1

Notes indicated by numbers in parentheses are located on page B-7.

TABLE B.1 BULLETIN CLOSEOUT STATUS FOR NUCLEAR POWER FACILITIES (contd)

Facility	Utility	Docket	Facility Status 06-18-80 (1)	NRC Region	NSSS	Utility Response Date	Inspection Report and Date	Closeout Status and Criterion (2)
Cook 1	IMECO	50-315	OL	III	W	09-04-80	80-13(10-22-80)	Closed 2
Cook 2	IMECO	50-316	OL	III	W	09-04-80	80-11(10-22-80)	Closed 2
Cooper Station	NPPD	50-298	OL	IV	GE	06-27-80 08-06-80	80-12(08-29-80)	Closed 2
Crystal River 3	FPC	50-302	OL	II	B&W	07-30-80	80-33(11-24-80)	Closed 2
Davis-Besse 1	TECO	50-346	OL	III	B&W	08-22-80 12-08-80	80-25(10-14-80)	Closed 1
Diablo Canyon 1	PG&E	50-275	CP	V	W	11-25-80 04-10-81	81-19(08-12-81)	Closed 2
Diablo Canyon 2	PG&E	50-323	CP	V	W	11-25-80 04-10-81	81-13(08-12-81)	Closed 2
Dresden 2	CECO	50-237	OL	III	GE	08-29-80	84-03(04-10-84)	Closed 1
Dresden 3	CECO	50-249	OL	III	GE	08-29-80	84-02(04-10-84)	Closed 1
Duane Arnold	IELPCO	50-331	OL	III	GE	07-01-80	80-13(09-24-80)	Closed 2
Farley 1	APCO	50-348	OL	II	W	08-06-80 04-08-86	81-29(01-28-82)	Closed 2
FitzPatrick	PASNY	50-333	OL	I	GE	09-05-80	80-15(12-10-80)	Closed 2
Fort Calhoun 1	OPPD	50-285	OL	IV	C-E	08-25-80	81-14(07-23-81)	Closed 2
Ginna	RG&E	50-244	OL	I	W	08-29-80	81-24(01-11-82)	Closed 2

Notes indicated by numbers in parentheses are located on page B-7.

TABLE B.1 BULLETIN CLOSEOUT STATUS FOR NUCLEAR POWER FACILITIES (contd)

Facility	Utility	Docket	Facility Status 06-18-80 (1)	NRC Region	NSSS	Utility Response Date	Inspection Report and Date	Closeout Status and Criterion (2)
Haddam Neck	CYAPCO	50-213	OL	I	W	08-27-80	84-12(07-24-84)	Closed 2
Hatch 1	GPC	50-321	OL	II	GE	08-29-80 10-23-80	81-09(05-06-81)	Closed 2
Hatch 2	GPC	50-366	OL	II	GE	08-29-80 10-23-80	81-09(05-06-81)	Closed 2
Indian Point 2	ConEd	50-247	OL	I	W	09-02-80	83-11(05-11-83)	Closed 1
Indian Point 3	PASNY	50-286	OL	I	W	08-29-80		Closed 2
Kewaunee	WPS	50-305	OL	III	W	09-11-80 03-04-81	80-20(10-28-80)	Closed 2
Maine Yankee	MYAPCO	50-309	OL	I	C-E	08-28-80	81-12(06-15-81)	Closed 1
McGuire 1	DUPCO	50-369	CP	II	W		80-32(01-14-81)	(3)
Millstone 1	NU	50-245	OL	I	GE	08-25-80	80-17(10-27-80)	Closed 2
Millstone 2	NU	50-336	OL	I	C-E	08-25-80	80-19(10-27-80)	Closed 2
Monticello	NSP	50-263	OL	III	GE	08-05-80	80-20(01-16-81)	Closed 2
Nine Mile Point 1	NMP	50-220	OL	I	GE	08-15-80 09-03-80 10-29-80	80-08(10-09-80)	Closed 1
North Anna 1	VEPCO	50-338	OL	II	W	09-05-80	81-11(04-29-81)	Closed 1
North Anna 2	VEPCO	50-339	CP	II	W	09-05-80	81-07(04-29-81)	Closed 1
Oconee 1	DUPCO	50-269	OL	II	B&W	08-27-80 09-16-80	85-15(07-09-85)	Closed 2

Notes indicated by numbers in parentheses are located on page B-7.

TABLE B.1 BULLETIN CLOSEOUT STATUS FOR NUCLEAR POWER FACILITIES (contd)

Facility	Utility	Docket	Facility Status 06-18-80 (1)	NRC Region	NSSS	Utility Response Date	Inspection Report and Date	Closeout Status and Criterion (2)
Oconee 2	DUPCO	50-270	OL	II	B&W	08-27-80 09-16-80	85-15(07-09-85)	Closed 2
Oconee 3	DUPCO	50-287	OL	II	B&W	08-27-80 09-16-80	85-15(07-09-85)	Closed 2
Oyster Creek 1	JCP&L/ GPUN	50-219	OL	I	GE	08-27-80 11-10-80	84-28(02-11-85)	Closed 2
Palisades	CPC	50-255	OL	III	C-E	09-04-80	81-05(04-15-81)	Closed 1
Peach Bottom 2	PECO	50-277	OL	I	GE	08-29-80	82-01(02-12-82)	Closed 1
Peach Bottom 3	PECO	50-278	OL	I	GE	08-29-80	82-01(02-12-82)	Closed 1
Pilgrim 1	BECO	50-293	OL	I	GE	08-19-80 10-08-80 11-07-80	85-11(06-28-85)	Closed 1
Point Beach 1	WEPCO	50-266	OL	III	W	07-08-80	80-12(08-21-80)	Closed 2
Point Beach 2	WEPCO	50-301	OL	III	W	07-08-80	80-12(08-21-80)	Closed 2
Prairie Island 1	NSP	50-282	OL	III	W	08-28-80 10-03-80	80-19(12-17-80)	Closed 1
Prairie Island 2	NSP	50-306	OL	III	W	08-28-80 10-03-80	80-19(12-17-80)	Closed 1
Quad Cities 1	CECO	50-254	OL	III	GE	08-29-80 07-02-85	80-19(11-24-80)	Closed 2
Quad Cities 2	CECO	50-265	OL	III	GE	08-29-80 07-02-85	80-21(11-24-80)	Closed 2

Notes indicated by numbers in parentheses are located on page B-7.

TABLE B.1 BULLETIN CLOSEOUT STATUS FOR NUCLEAR POWER FACILITIES (contd)

Facility	Utility	Docket	Facility Status 06-18-80 (1)	NRC Region	NSSS	Utility Response Date	Inspection Report and Date	Closeout Status and Criterion (2)
Rancho Seco 1	SMUD	50-312	OL	V	B&W	08-27-80	80-27(10-22-80)	Closed 2
Robinson 2	CP&L	50-261	OL	II	W	08-14-80 09-30-80 12-15-80 01-19-81 04-29-83	81-05(03-16-81)	Closed 1
Salem 1	PSE&G	50-272	OL	I	W	08-29-80	80-21(10-28-80)	Closed 1
Salem 2	PSE&G	50-311	CP	I	W	08-29-80	80-17(10-28-80)	Closed 1
San Onofre 1	SCE	50-206	OL	V	W	08-28-80 10-16-80 11-05-86 05-15-87	80-27(10-17-80)	Closed 1
Sequoyah 1	TVA	50-327	CP	II	W	09-05-80 03-03-81 11-05-86	82-11(07-02-82)	Closed 1
St. Lucie 1	FPL	50-335	OL	II	C-E	09-02-80	80-35(12-10-80) (4)(5)	Closed 1
Summer 1	SCE&G	50-395	CP	II	W		82-16(03-22-82)	(3)
Surry 1	VEPCO	50-280	OL	II	W	09-05-80	84-10(02-01-85)	Closed 1
Surry 2	VEPCO	50-281	OL	II	W	09-05-80	84-10(02-01-85)	Closed 1
TMI 1	Met-Ed/ GPUN	50-289	OL	I	B&W	09-29-80 10-31-80	82-15(08-26-82)	Closed (6)

Notes indicated by numbers in parentheses are located on page B-7.

TABLE B.1 BULLETIN CLOSEOUT STATUS FOR NUCLEAR POWER FACILITIES (contd)

Facility	Utility	Docket	Facility Status 06-18-80 (1)	NRC Region	NSSS	Utility Response Date	Inspection Report and Date	Closeout Status and Criterion (2)
Trojan	PGE	50-344	OL	V	W	08-14-80 10-23-80 06-03-86	81-01(01-29-81)	Closed 1
Turkey Point 3	FPL	50-250	OL	II	W	09-04-80	81-13(06-09-81)	Closed 2
Turkey Point 4	FPL	50-251	OL	II	W	09-04-80	81-13(06-09-81)	Closed 2
Vermont Yankee 1	VYNP	50-271	OL	I	GE	08-28-80	84-05(04-26-84) 84-08(06-04-84)	Closed 1
Yankee-Rowe 1	YAECO	50-029	OL	I	W	08-29-80	80-12(09-16-80)	Closed 2
Zion 1	CECO	50-295	OL	III	W	08-29-80	80-17(10-14-80) 83-02(04-20-83)	Closed 1
Zion 2	CECO	50-304	OL	III	W	08-29-80	80-17(10-14-80) 83-02(04-20-83)	Closed 1

Notes indicated by numbers in parentheses are located on page B-7.

Notes for Tables B.1:

1. Facility status relates to 06-18-80, and is based on Reference 1 below. The following abbreviations apply: CP, construction permit; OL, operating license.

2. The closeout criteria appear below.

3. On 05-04-90, Kerry Landis (RII) informed Alan Hennick (PARAMETER) by telephone, that McGuire 1 and Summer 1 had been originally listed as NTOLs but have been given exemptions from responding because of licensing delays of over a year.

4. In a meeting on 01-25-90 at NRC Headquarters, Kerry Landis (RII) informed Carl H. Berlinger and Alan Hennick that IR 80-35 closes the bulletin for St. Lucie 1 and that IR 81-21 does not reopen it.

5. As a general extension of Note 4, Kerry Landis indicated that Region II intends to retain a closeout unless a later IR specifically reopens the bulletin.

6. In a memo to Charles E. Rossi (NRR) from John F. Stolz (NRR), TMI 1 is closed because "all open items identified in IR 82-15(08-26-82) have been formally closed out".

CRITERIA FOR BULLETIN CLOSEOUT

1. The licensee response and an NRC/Region inspection report indicate that: (1) no necessary modifications have been made to insure that acceptable power will be available to the ENS during abnormal occurrences, and (2) the test was completed satisfactorily.

2. The licensee response indicates that: (1) no modifications are necessary to insure that acceptable power will be available to the ENS during abnormal occurrences, and (2) the test was completed satisfactorily.

REFERENCES

1. United States Nuclear Regulatory Commission, Licensed Operating Reactors, Status Summary Report, Data as of 01-31-90, NUREG-0020, Volume 14, Number 2, February 1990.

2. United States Nuclear Regulatory Commission, Code of Federal Regulations, Energy, Title 10, Parts 1 to 50 revised as of January 1, 1990, cited as 10 CFR 0.735-1.

TABLE B.2 REVISED LIST OF NUCLEAR POWER FACILITIES WITH EMERGENCY NOTIFICATION SYSTEM (ENS) POWERED BY LOCAL TELEPHONE COMPANY

Region I

Beaver Valley 1
Calvert Cliffs 1,2
FitzPatrick
Ginna
Indian Point 3
Nine Mile Point 1

Region II

Farley 1 (changed to on-site powered ENS indicated in April 8, 1986 response)
Hatch 1,2

Region III

Cook 1,2
Duane Arnold

Region IV

Cooper Station
Fort Calhoun 1

Region V

Trojan

Note: This table is based on the information provided in the utility responses identified in Table B.1.

TABLE B.3 REVISED LIST OF NUCLEAR POWER FACILITIES WITH EMERGENCY NOTIFICATION SYSTEM (ENS) USING ON-SITE POWER

Region I

Haddam Neck
Indian Point 2
Maine Yankee
Millstone 1,2
Oyster Creek 1
Peach Bottom 2,3
Pilgrim 1
Salem 1,2
TMI 1 (with complete backup by telephone company)
Vermont Yankee 1
Yankee-Rowe 1

Region II

Browns Ferry 1,2,3
Brunswick 1,2
Crystal River 3
North Anna 1,2
Oconee 1,2,3 (emergency power is supplied by the telephone company)
Robinson 2
Sequoyah 1
St. Lucie 1
Surry 1,2
Turkey Point 3,4

Region III

Big Rock Point 1
Davis-Besse 1
Dresden 2,3
Kewaunee
Monticello
Palisades
Point Beach 1,2
Prairie Island 1,2
Quad Cities 1,2
Zion 1,2

Region IV

Arkansas 1,2

Region V

Diablo Canyon 1,2
Rancho Seco 1
San Onofre 1

Note: This table is based on information provided by the utility responses identified in Table B.1

APPENDIX C

Utility Manhours Expended on IEB 80-15
For Nuclear Power Facilities

TABLE C.1

Facility	Conducting Review and Preparing Report	Performing Corrective Actions	Total	Closeout Status and Criterion
Arkansas 1,2	40	0	40	Closed 2
Beaver Valley 1	30	0	30	Closed 1
Browns Ferry 1,2,3	28	200	228	Closed 1
Cook 1,2	12	0	12	Closed 2
Cooper Station	3	0	3	Closed 2
Crystal River 3	64	0	64	Closed 2
Davis-Besse 1	18	8	26	Closed 1
Farley 1	25	0	25	Closed 2
Fort Calhoun 1	60	12	72	Closed 2
Ginna	1	0	1	Closed 2
Indian Point 3	6	0	6	Closed 2
Kewaunee	40	0	40	Closed 2
Maine Yankee	10	120	130	Closed 1
Millstone 1,2	32	0	32	Closed 2
Monticello	16	4	20	Closed 2
Nine Mile Point 1	80	0	80	Closed 1
Oconee 1,2,3	10	0	10	Closed 2
Oyster Creek 1	50	0	50	Closed 2
Peach Bottom 2,3	80	0	80	Closed 1
Pilgrim 1	16	0	16	Closed 1
Point Beach 1,2	8	0	8	Closed 2
Robinson 2	50	0	50	Closed 1
Salem 1,2	8	0	8	Closed 1

TABLE C.1 (contd)

Facility	Conducting Review and Preparing Report	Performing Corrective Actions	Total	Closeout Status and Criterion
Sequoyah 1	40	200	240	Closed 1
St. Lucie 1	14	434	448	Closed 1
TMI 1	75	0	75	Closed (see note 6 page B-7)
Trojan	12	0	12	Closed 1
Turkey Point 3,4	31	2	33	Closed 2
Vermont Yankee 1	32	240	272	Closed 1
Yankee-Rowe 1	50	0	50	Closed 2
		Total	2161	

APPENDIX D

Abbreviations

APCO	Alabama Power Company
AP&L	Arkansas Power and Light Company
BECO	Boston Edison Company
BG&E	Baltimore Gas and Electric Company
B&W	Babcock & Wilcox Company
C-E	Combustion Engineering Incorporated
CECO	Commonwealth Edison Company
CFR	Code of Federal Regulations
ConEd	Consolidated Edison Company of New York, Inc.
CP	Construction Permit
CPC	Consumers Power Company
CP&L	Carolina Power and Light Company
CR	Contractor Report
CYAPCO	Connecticut Yankee Atomic Power Company
DLC	Duquesne Light Company
DUPCO	Duke Power Company
ENS	Emergency Notification System
FPC	Florida Power Corporation
FPL	Florida Power & Light Company
FSAR	Final Safety Analysis Report
GAO	Government Accounting Office
GE	General Electric Company
GPC	Georgia Power Company
GPUN	GPU Nuclear Corporation
IE	(See NRC/IE)
IEB	Inspection and Enforcement Bulletin (NRC)
IEC	Inspection and Enforcement Circular (NRC)
IELPCO	Iowa Electric Light and Power Company
IMECO	Indiana and Michigan Electric Company
IN	Information Notice (NRC)
IR	Inspection Report (NRC/Region)
JCP&L	Jersey Central Power and Light Company
LER	Licensee Event Report
Met-Ed	Metropolitan Edison
MYAPCO	Maine Yankee Atomic Power Company
NMP	Niagara Mohawk Power Company
NMSS	Nuclear Materials Safety and Safeguards
NPPD	Nebraska Public Power District
NRC/IE	Nuclear Regulatory Commission/ Office of Inspection & Enforcement
NRR	Office of Nuclear Reactor Regulation (NRC)
NSP	Northern States Power Company
NSSS	Nuclear Steam System Supplier
NTOL	Near Term Operating License
NU	Northeast Utilities
OL	Operating License
OPPD	Omaha Public Power District
PASNY	Power Authority of the State of New York
PECO	Philadelphia Electric Company
PGE	Portland General Electric Company

PG&E	Pacific Gas and Electric Company
PSE&G	Public Service Electric and Gas Company
R	Region (NRC)
RG&E	Rochester Gas and Electric Corporation
SCE	Southern California Edison Company
SCE&G	South Carolina Electric and Gas Company
SDI	Shut Down Indefinitely
SMUD	Sacramento Municipal Utility District
TECO	Toledo Edison Company
TMI	Three Mile Island
TVA	Tennessee Valley Auth ty
VEPCO	Virginia Electric ar wer Company
VYNP	Vermont Yankee Nuc. Power Corporation
W	Westinghouse Electri Corporation
WEPCO	Wisconsin Electric Power Company
WPS	Wisconsin Public Service Corporation
YAECO	Yankee Atomic Electric Company

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10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

Documentation is provided in this report for the closeout of IE Bulletin 80-15 for nuclear power reactors. This bulletin pertained to a possible loss of the Emergency Notification System (ENS) upon loss of offsite power. Closeout is based on the implementation and verification of six (6) required actions by licensees of nuclear power reactors in operation or near to receiving an operating license when the bulletin was issued on June 18, 1980. Evaluation of utility responses and NRC/Region inspection reports indicates that the bulletin is closed for all of the 69 nuclear power reactors to which it was issued for action and which were not shut down indefinitely or permanently at the time of issuance of this report. Background information is supplied in the Introduction and Appendix A. Nuclear fuel facilities as well as nuclear power facilities were identified in the enclosures to the bulletin. However, per an NRC memorandum, the closeout of the bulletin for nuclear fuel facilities is not within the scope of this report.

12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)

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