

# Closeout of IE Bulletin 80-10: Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to the Environment

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**PARAMETER, Inc.**

Prepared for  
**U.S. Nuclear Regulatory Commission**

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## Abstract

Documentation is provided in this report for the closeout of IE Bulletin 80-10 regarding contamination of nonradioactive systems resulting in the potential for unmonitored, uncontrolled release of radioactivity to the environment. Closeout is based on the documentation and verification of four actions required by the bulletin for holders of an operating license for a nuclear power facility at the time the bulletin was issued (05-06-80). The bulletin was issued for information to holders of a construction permit for a nuclear power facility. Evaluation of utility responses and NRC/Region inspection reports in accordance with the closeout criterion indicates that the bulletin is closed for 65 (98%) of the 66 nuclear power facilities to which it was issued for action. A follow-up item is proposed for the facility with open status, for the use of NRC regional inspectors in ensuring successful completion of required actions. When the bulletin is closed as anticipated for the facility which requires follow-up (see page C-1), the concerns of the bulletin will have been resolved completely. Background information is supplied in the Introduction and Appendix A.



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CLOSEOUT OF IE BULLETIN 80-10:  
CONTAMINATION OF NONRADIOACTIVE SYSTEM AND RESULTING  
POTENTIAL FOR UNMONITORED; UNCONTROLLED RELEASE  
OF RADIOACTIVITY TO ENVIRONMENT

INTRODUCTION

This report provides documentation for the closeout of IE Bulletin 80-10 in accordance with the Statement of Work in Task Order 37 under NRC Contract 05-85-157-02. Documentation is based primarily on the records obtained from the NRC Document Control System.

IE Bulletin 80-10 was issued on May 6, 1980. All holders of operating licenses for nuclear power reactor facilities were to take four specific actions. The concern of the bulletin pertained to the unmonitored, uncontrolled release of radioactivity to the environment from nonradioactive systems which could possibly become contaminated due to leakage, valving errors, or other operating conditions in radioactive systems.

At the Brunswick Nuclear Facility, the auxiliary boiler was operated for an extended period of time with radioactive contaminated water. The cause of the event was the use of a temporary heating hose from the auxiliary boiler to a radioactive waste evaporator concentrate tank. Upon cooling and condensation of steam in the hose, contaminated water siphoned from the concentrate tank back to the auxiliary boiler. This event prompted the bulletin.

IE Bulletin 80-10 and related IE circulars are included in Appendix A for presentation of background information and required actions. Evaluation of utility responses and NRC/Region inspection reports is documented in Appendix B as the basis of bulletin closeout. A follow-up item is proposed in Appendix C for the use of NRC/Region inspectors in assuring that required and corrective actions are completed satisfactorily. Abbreviations used in this report and associated documents are listed in Appendix D.

## SUMMARY

1. The bulletin is closed per the Criterion (see page B-5) for the following 65 facilities for which actions were required:

Arkansas 1,2	Fort St. Vrain	Point Beach 1,2
Beaver Valley 1	Ginna	Prairie Island 1,2
Big Rock Point 1	Hatch 1,2	Quad Cities 1,2
Browns Ferry 1,2,3	Indian Point 2,3	Rancho Seco 1
Brunswick 1,2	Kewaunee	Robinson 2
Calvert Cliffs 1,2	Maine Yankee	Salem 1,2
Cook 1,2	Millstone 1,2	San Onofre 1
Cooper Station	Monticello	St. Lucie 1
Crystal River 3	Nine Mile Point 1	Surry 1,2
Davis-Besse 1	North Anna 1	TMI 1
Dresden 2,3	Oconee 1,2,3	Trojan
Duane Arnold	Oyster Creek 1	Turkey Point 3,4
Farley 1	Palisades	Vermont Yankee 1
FitzPatrick	Peach Bottom 2,3	Yankee-Rowe 1
Fort Calhoun 1	Pilgrim 1	Zion 1,2

2. The bulletin is open for the following facility:

Haddam Neck

3. The following facilities are excluded from Table B.1 because they are shut down indefinitely or permanently (SDI):

Dresden 1	Indian Point 1	TMI 2
Humboldt Bay 3	LaCrosse	

## CONCLUSION

When the bulletin is closed as anticipated for the facility which requires follow-up (see page C-1), the concerns of the bulletin will have been resolved completely.

## APPENDIX A

### Background Information and Required Actions

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



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May 6, 1980

IE Bulletin No. 80-10

CONTAMINATION OF NONRADIOACTIVE SYSTEM AND RESULTING POTENTIAL FOR UNMONITORED,  
UNCONTROLLED RELEASE OF RADIOACTIVITY TO ENVIRONMENT

Description of Circumstance

At the Brunswick Nuclear Facility, the auxiliary boiler was operated for an extended period of time with radioactively contaminated water in the boiler at levels up to  $2 \times 10^{-2}$  micro curies per milliliter. A tube leak in the firebox of the oil fired auxiliary boiler resulted in an unmonitored, uncontrolled release of radioactivity to the environment.

The initial contaminating event was caused by the use of a temporary heating hose from the auxiliary boiler to a radioactive waste evaporator concentrate tank. Upon cooling and condensation of the steam in the temporary hose, contaminated water siphoned from the concentrate tank back to the auxiliary boiler. Due to additional, continuing leaks in the heat exchanger of the waste evaporator (to which the auxiliary boiler also provides process steam), the licensee's efforts to decontaminate the auxiliary boiler feedwater had been ineffective.

Maintenance of proper boiler chemistry was difficult because blowdown options were severely restricted due to the contamination. As a result, a boiler tube failure caused on the order of 100 millicuries of radioactive material to be released off-site via the auxiliary boiler fire box and smokestack in the form of steam. This resulted in increased environmental levels of cesium and activation products being detected as far as eight miles downwind from the site boundary.

Action to be Taken by Licensee with an Operating License

1. Review your facility design and operation to identify systems that are considered as nonradioactive (or described as nonradioactive in the FSAR), but could possibly become radioactive through interfaces with radioactive systems, i.e., a nonradioactive system that could become contaminated due to leakage, valving errors or other operating conditions in radioactive systems. In particular, special consideration should be given to the following systems: auxiliary boiler system, demineralized water system, isolation condenser system, PWR secondary water clean-up system, instrument air system, and the sanitary waste system.
2. Establish a routine sampling/analysis or monitoring program for these systems in order to promptly identify any contaminating events which could lead to unmonitored, uncontrolled liquid or gaseous releases to the environment, including releases to on-site leaching fields or retention ponds.

3. If these nonradioactive systems are or become contaminated, further use of the system shall be restricted until the cause of the contamination is identified and corrected and the system has been decontaminated. Decontamination should be performed as soon as possible. However, if it is considered necessary to continue operation of the system as contaminated, an immediate safety evaluation of the operation of the system as a radioactive system must be performed in accordance with the requirements of 10 CFR 50.59. The 10 CFR 50.59 safety evaluation must consider the level of contamination (i.e., concentration and total curie inventory) and any potential releases (either routine or accident) of radioactivity to the environment. The relationship of such releases to the radioactive effluent limits of 10 CFR 20 and the facility's Technical Specification and to the environmental radiation dose limits of 40 CFR 190 must also be evaluated. The record of the safety evaluation must set forth the basis and criteria on which the determination was made.
4. If it is determined in the 10 CFR 50.59 safety evaluation that operation of the system as a radioactive system is acceptable (i.e., does not involve an unreviewed safety question or a change to the Technical Specifications), provisions must be made to comply with the requirements of 10 CFR 20.201, General Design Criterion 64 to 10 CFR 50, Appendix I to 10 CFR 50 and the facility's Technical Specifications. In specific, any potential release points must be monitored and all releases must be controlled and maintained to "As Low As is Reasonably Achievable" levels as addressed in Appendix I to 10 CFR 50 and within the corresponding environmental dose limits of 40 CFR 190. However, if in the 10 CFR 50.59 determination it is determined that operation of the system as a radioactive system does constitute an unreviewed safety question or does require a change to the Technical Specifications, the system shall not be operated as contaminated without prior Commission approval.

Actions taken in response to Items 1 and 2 above shall be completed within 45 days from the date of this Bulletin. A verification letter shall be submitted within an additional 15 days to the Director of the appropriate NRC Regional Office. This letter shall document the completion of the required actions but need not delineate the specific actions taken. The specifics shall be documented and made available to the NRC for review during future onsite inspection efforts.

For facilities with a construction permit, no action is required. The Bulletin is provided for information. The subject of the Bulletin and the action required of operating plants should prove useful in the planning of systems designs and future operations.

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

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WASHINGTON, D.C. 20555

November 28, 1977

IE Circular No. 77-14

SEPARATION OF CONTAMINATED WATER SYSTEMS FROM NONCONTAMINATED PLANT SYSTEMS

This circular describes an event which occurred at a nuclear power facility; however, the generic implications may be applicable to test reactors, fuel cycle facilities, and major by-product material processors.

In June, 1977, the licensee for Beaver Valley 1 reported that make up water from a primary water storage tank (PWST) contaminated the plant water treatment system, which in turn supplies the inplant domestic (potable) water system. The plant domestic water became contaminated with a tritium concentration of  $7 \times 10^{-3}$  uCi/ml. The domestic water was contaminated for approximately six hours before the condition was detected by the licensee and controls were established over the use of in-house water. No significant exposure of plant personnel resulted from the event; however, five individuals showed positive levels of tritium by urinalysis. No release to the offsite environment above maximum permissible occurred.

The PWST receives processed reactor coolant water from the Boron Recovery System which has been purified through evaporation, degasification and demineralization to remove radioisotopes other than tritium. The PWST is used to supply primary grade water to the reactor coolant system and is normally kept separated from the water treatment system. The cross connection between the primary grade water system and the water treatment system occurred when an isolation valve was inadvertently left open during valve line-up operations to recirculate the PWST. The procedure which specified the required line-up was being used for the first time since preoperational testing and did not list the subject valve.

In addition to the valving error, however, a design error resulted in connecting a line from the PWST to a water treatment system line at a position upstream of two series stop-check valves. In the proper configuration, the line would have been connected downstream of the stop-check valves, which would have prevented back flow of water from the primary grade water system to the water treatment system even with the isolation valve left open. Corrective actions taken

November 28, 1977

by the licensee were to: (1) correct identified procedural deficiencies which led to the valving error; (2) modify the piping installation to the intended configuration; and (3) add two series isolation valves upstream of the stop-check valves in a "tell-tale" arrangement to provide an air break between the primary water and water treatment lines. The above corrective actions are being reviewed for suitability with design separation criteria.

Section 10.5.3 of the National Standard Plumbing Code requires double check valves or siphon breaker between potable and nonpotable systems. Section 9.2.4 of the Standard Review Plan (NUREG-75/087) states that the acceptance criteria for design of the potable and sanitary water systems (PSWS) is acceptable if there are no interconnections between the PSWS and systems having the potential for containing radioactive materials.

A somewhat similar incident had previously occurred in March, 1975, at Millstone Units 1 and 2, when an improperly wired conductivity cell instrument permitted the return of high activity water to the house heating boiler makeup system. Overflow from the deaerating feed tank and surge tank, which are components of the house heating boiler makeup system, resulted in an unfiltered and unmonitored release of contaminated water.

It is recommended that you review your systems and as-built (or design) drawings, identify all interconnections between contaminated and non-contaminated water systems, and review the interconnection design to assure that separation has been provided. Operating procedures which could lead to inadvertent contamination of domestic water systems should be reviewed to verify that proper valve lineup and administrative controls are provided to prevent contamination of the domestic water supply and the subsequent intake of radioisotopes by plant personnel.

No written response to this Circular is required. Your review of this matter to determine its applicability to your facility and any corrective and preventive actions taken or planned, as appropriate, will be reviewed during a subsequent NRC inspection. If you desire additional information regarding this matter, contact the Director of the appropriate NRC Regional Office.



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October 19, 1979

IE Circular No. 79-21

PREVENTION OF UNPLANNED RELEASES OF RADIOACTIVITY

Numerous incidents of unplanned releases of radioactivity have been reported to the NRC within the past few months. These incidents of leaks, overflows and spills have resulted in contamination of areas outside of plant buildings. The attached table provides you with summary information on these events, their apparent causes, the radiological consequences and the corrective actions.

We believe that a number of these incidents could have been avoided and preventive actions for these types of unplanned releases should be instituted by all reactor licensees. Based on the reported incidents, the following preventive measures can minimize the occurrence of such events.

1. Review of procedures for transfer of radioactive liquids. Errors in written procedures have led to mistakes in valve line-ups and tank overflows. Written procedures, including check lists for valve line-ups, should be developed and followed for operations which could cause spills of radioactivity. Management controls, including audits, should be employed to assure verbatim compliance with such procedures.
2. Review of "as built" systems having the potential of inadvertent releases because of design or construction errors. Consider items such as:
  - a. Tank overflows should be routed to liquid radwaste tanks.
  - b. Storm drains should be located away from areas with a high potential for spills.
  - c. Consideration should be given to drip pans under equipment, such as pumps and valves, from which leakage is expected.
  - d. Cofferdams should be installed under doors to areas with a potential for radioactive spills.
  - e. Preoperational testing should verify that crossconnects do not exist that would permit radioactivity to flow from operating unit(s) to unit(s) under construction.
3. Periodically functionally test and perform inspections to verify integrity of systems that could cause an inadvertent release. Excessive wear and corrosion degradation have occurred in valves, seals and piping systems to cause leaks. New permanent and temporary piping systems should be

hydrostatically tested prior to first use. Underground piping should be periodically hydrostatically tested. Preventive maintenance programs should be implemented and identified problems, such as leaking equipment and plugged floor drains, should be promptly repaired.

No written response to this Circular is required. If you require additional information regarding this subject, contact the Director of the appropriate NRC Regional Office

Enclosure:  
Recent Events of Radioactive  
Contamination

# RECENT EVENTS OF RADIOACTIVE CONTAMINATION OUTSIDE BUILDINGS

Plant	Date	Apparent cause	Radiological Consequence	Licensee Followup Action
Turkey Point 3/4	6/11/79	Operator Error  900 gallons of water processed by radwaste system overflowed from waste processing tank because of error in valve line-up. The Aux. Bldg. floor drain backed up to the on-site storm drain. The drain system discharged to an on-site underground tile bed.	Total of 0.01 mCi of Co-58 Co-60 released to storm drain	Procedure reviewed with operator.
Palisades	6/9/79	Inadequate Procedures  Contaminated secondary system spent powdered resins were transferred to an outside storage bin without monitoring. Rain storm caused resins to overflow the storage bin and be washed to Lake Michigan via storm drain.	Resins activity at 10 <sup>-5</sup> µCi/cc; total release about 10 µCi of Co-60	The monitoring procedure to determine the routing of the secondary spent resins has been replaced by a procedure requiring all spent secondary system resins to be handled and shipped as solid waste
Surry 2	5/21/79	Equipment Failure.  Core spray pump isolation valve leaked during RWST transfer to Spent Fuel Pit. Water leaked to Safeguards Bldg. floor. Floor drain plugged; resulted in water flow out of building.	5 gallons spilled; 2 gallons outside of bldg. 0.02 µCi/cc, Co-58 0.035 µCi/cc, H-3.	Leak repaired Three 55-gallon drums of contaminated dirt removed

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Page 1 of 3

Plant	Date	Apparent Cause	Radiological Consequence	Licensee Follow-up Action
Oconee 3	5/16/79 5/17/79	Operational Error.  Normally closed valve left open during pumping of fuel transfer canal water to BWST. Water overflowed the BWST to Aux. Bldg. penetration room, down a stairway to area outside Aux. Bldg.	2000 gallons overflowed; 200-300 gallons out of building. $3.1 \times 10^{-4}$ $\mu\text{Ci/cc}$ , I-131.	Procedure reviewed with operating personnel. Areas outside of Aux. Bldg. decontaminated.
Farley 1/2	5/14/79	Design Error.  Decontamination drains from Unit 1 routed to Unit 2 sump and released to flush pond via tendon access area. Those drains should have been routed to Unit 1 floor drain system.	1860 gallons of contaminated water discharged to pond. Estimated maximum activity of 10 mCi - Co-58. Pond mud activity < 500 pCi/Kg. No pond water activity detected.	Review all drains from Unit 1 and Unit 2. Six such drains were located and plugged.
Oyster Creek	4/17/79	Equipment Failure.  Leakage from a Drywell Equipment Drain Tank (DEDT) line.	Water in pipe tunnel @ 0.3 $\mu\text{Ci/cc}$ and soil in vicinity of penetration to the reactor building were found to be contaminated.	DEDT line repaired. Structure to enclose pipe from Rx. Bldg. to main pipe tunnel to constructed.

Enclosure  
IE Circular No. 79-21  
Page 2 of 3

Plant	Date	Apparent Cause	Radiological Consequence	Licensee Follow-up Action
Brunswick 1	5/8-9/79	Operator Error and Equipment Failure.  Air mixing valve of RWCU backwash tank left open after liquid transfer. Dried tank residue released to building ventilation system via loose access cover.	Total release of 12 mCi of corrosion product.	Tank transfer procedure reviewed. Caution tag on valve installed. Loose access cover re-paired.
Hatch 1/2	3/20/79	Construction Error:  Buried temporary line for N <sub>2</sub> tank in yard for feed-water heaters was not capped after tank removal. Rx steam released into ground from buried line.	Highest on-site ground water of $3 \times 10^5$ pCi/l - H <sub>2</sub> Highest qtr. avg. off-site outfall of subsurface drainage was $1.8 \times 10^3$ pCi/l.	Temporary line broken inside turbine building and capped.
North Anna	9/25/79	Construction Error  Relief valve on the volume control tank lifted thus transferring reactor coolant to the high level waste drain tank and releasing dissolved noble gases to the auxiliary building via the waste system vent. An incorrectly connected vent line allowed venting directly to the auxiliary building.	Airborne radioactivity levels in the Auxiliary Building reached 150 X MPCs. Auxiliary Building was evacuated.	Still under investigation

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8005050074

June 24, 1980

IE Circular No. 80-14

RADIOACTIVE CONTAMINATION OF PLANT DEMINERALIZED WATER SYSTEM AND RESULTANT  
INTERNAL CONTAMINATION OF PERSONNEL

This circular describes an event which occurred at a nuclear power facility; however, the generic implications may be applicable to research reactors, and fuel cycle facilities.

On March 17, 1980, a licensee informed the NRC resident inspector that portions of the plant demineralized water (DW) system were found to be radioactively contaminated. A temporary hose used to add demineralized water to the spent fuel pool was the pathway for the cross-contamination. After this fuel pool makeup was completed on March 14, the temporary DW line (still connected to the DW header) was inadvertently left submerged in the fuel pool. Since the DW header pressure at the point of supply was relatively low (a DW booster pump had been secured), a siphoning action occurred, resulting in radioactive contamination of portions of the DW header.

On March 17, 1980, while performing routine secondary system chemical analyses, the licensee discovered that the demineralized water tap in the chemistry lab contained high levels of boron and had activity of  $1.5 \times 10^{-4}$  uCi/ml (mainly Cs-134, Cs-137, Co-58, Co-60 and Mn-54). It was subsequently discovered that demineralized water from the chemistry laboratory supply tap had been used to make five (5) pots of coffee. The remaining coffee was confiscated and the twenty-three (23) individuals who had consumed this coffee were whole-body counted. All involved individuals showed no intake greater than an equivalent 0.01 MPC-HRS. Analysis performed by the licensee's radiation consultant, based on the maximum concentration of radioactivity found in the coffee, indicated that the resultant 50-year dose commitment to an individual drinking eight ounces of this coffee would be less than 1 millirem.

Further licensee investigation revealed that the non-radiological chemistry DW supply tap was the only DW supply point outside the Auxiliary Building controlled area. This DW supply tap was tagged prohibiting human consumption to prevent a similar event in the future.

It is recommended that you review your facilities use of demineralized water (DW) via temporary connections and give attention to the following:

1. Provisions should be made to assure that radioactive materials are not inadvertently introduced into your facility's DW system via the improper use of temporary connections. A temporary cross connection between contaminated systems and the DW system without adequate physical controls to prevent cross-contamination should be prohibited.

2. In addition to some physical means of preventing backflow into the DW system, appropriate administrative controls should be established to ensure that the DW supply valve is secured and temporary hosing is disconnected from the DW supply header after use.
3. Use of plant-supplied DW for human consumption should be prohibited. The potable water system should be the only authorized source of water for human consumption.
4. Examine potable and demineralized water systems to determine if pathways exist allowing or having the potential to allow contamination of these systems including temporary connections whereby siphons could cause situations described above.

No written response to this Circular is required. Your review of this matter to determine its applicability to your facility and any corrective and preventive actions taken or planned, as appropriate, will be reviewed during a subsequent NRC inspection. If you desire additional information regarding this matter, contact the Director of the appropriate NRC Regional Office.





APPENDIX B

Documentation of Bulletin Closeout



TABLE B.1 BULLETIN CLOSEOUT STATUS

Facility	Facility			Inspection Report and Date	Closeout Status(2)			
	Utility	Docket	Status(1) 05-06-80					
Arkansas 1	AP&L	50-313	OL	IV	B&W	07-02-80 10-30-80	80-24(02-03-81)	Closed
Arkansas 2	AP&L	50-368	OL	IV	C-E	07-02-80 10-30-80	80-24(02-03-81)	Closed
Beaver Valley 1	DLC	50-334	OL	I	W	07-07-80 07-09-80	81-23(09-09-81)	Closed
Big Rock Point 1	CPC	50-155	OL	III	GE	07-11-80 12-02-80 12-19-80	82-11(07-19-82)	Closed
Browns Ferry 1	TVA	50-259	OL	II	GE	07-07-80	81-12(05-26-81)	Closed
Browns Ferry 2	TVA	50-260	OL	II	GE	07-07-80	81-12(05-26-81)	Closed
Browns Ferry 3	TVA	50-296	OL	II	GE	07-07-80	81-12(05-26-81)	Closed
Brunswick 1	CP&L	50-325	OL	II	GE	07-01-80	83-23(08-05-83)	Closed
Brunswick 2	CP&L	50-324	OL	II	GE	07-01-80	83-23(08-05-83)	Closed
Calvert Cliffs 1	BG&E	50-317	OL	I	C-E	06-19-80	81-29(04-15-82)	Closed
Calvert Cliffs 2	BG&E	50-318	OL	I	C-E	06-19-80	81-27(04-15-82)	Closed
Cook 1	IMECO	50-315	OL	III	W	07-10-80	80-12(08-18-80)	Closed(3)
Cook 2	IMECO	50-316	OL	III	W	07-10-80	80-12(08-18-80)	Closed(3)
Cooper Station	NPPD	50-298	OL	IV	GE	06-17-80	80-13(09-24-80)	Closed
Crystal River 3	FPC	50-302	OL	II	B&W	06-25-80 09-10-80 10-14-80	82-14(06-24-82)	Closed
Davis-Besse 1	TECO	50-346	OL	III	B&W	06-19-80	81-11(09-01-81)	Closed(4)
Dresden 2	CECO	50-237	OL	III	GE	07-07-80	84-03(04-10-84)	Closed
Dresden 3	CECO	50-249	OL	III	GE	07-07-80	84-02(04-10-84)	Closed
Duane Arnold	IELPCO	50-331	OL	III	GE	06-25-80	81-19(11-03-81)	Closed

Notes indicated by numbers in parentheses are located at the end of the table.

TABLE B.1 (contd)

Facility	Facility			Utility		Facility		Status(1) NRC		Region NSSS		Utility		Inspection		Closeout	
	Utility	Docket	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	Response	Date	Report and	Date	Status(2)	Status(2)
Farley 1	APCO	50-348	OL	II	W	07-07-80	81-21(08-31-81)	Closed								Closed	
FitzPatrick	NYPA	50-333	OL	I	GE	07-07-80	81-09(05-27-81)	Closed								Closed	
Fort Calhoun 1	OPPD	50-285	OL	IV	C-E	07-03-80	80-17(10-20-80)	Closed								Closed	
Fort St. Vrain	PSCC	50-267	OL	IV	GA	06-30-80	80-15(08-13-80)	Closed								Closed	
Ginna	RG&E	50-244	OL	I	W	06-24-80	81-23(01-18-82)	Closed								Closed	
Haddam Neck	CYAPCO	50-213	OL	I	W	06-23-80	81-11(01-27-82)	Open									
							82-08(01-14-83)										
							89-02(05-13-89)										
Hatch 1	GPC	50-321	OL	II	GE	06-19-80	81-09(05-06-81)	Closed									
						07-18-80											
Hatch 2	GPC	50-366	OL	II	GE	06-19-80	81-09(05-06-81)	Closed									
						07-18-80											
Indian Point 2	ConEd	50-247	OL	I	W	06-20-80	81-17(05-05-82)	Closed									
Indian Point 3	NYPA	50-286	OL	I	W	07-03-80	87-10(05-27-87)	Closed									
Kewaunee	WPS	50-305	OL	III	W	07-07-80	81-11(07-08-81)	Closed									
Maine Yankee	MYAPCO	50-309	OL	I	C-E	07-07-80	81-19(01-19-82)	Closed									
Millstone 1	NNECO	50-245	OL	I	GE	07-03-80	80-23(02-12-81)	Closed									
Millstone 2	NNECO	50-336	OL	I	C-E	07-03-80	80-12(10-14-80)	Closed									
Monticello	NSP	50-263	OL	III	GE	06-30-80	84-01(02-21-84)	Closed									
Nine Mile Point 1	NMP	50-220	OL	I	GE	07-02-80	82-19(11-12-82)	Closed									
North Anna 1	VEPCO	50-338	OL	II	W	07-07-80	82-03(02-19-82)	Closed									
Oconee 1	DUPCO	50-269	OL	II	B&W	08-01-80	80-33(11-26-80)	Closed									
Oconee 2	DUPCO	50-270	OL	II	B&W	08-01-80	80-29(11-26-80)	Closed									
Oconee 3	DUPCO	50-287	OL	II	B&W	08-01-80	80-26(11-26-80)	Closed									
Oyster Creek 1	JCP&L/GPUN	50-219	OL	I	GE	07-01-80	82-28(01-10-83)	Closed									
Palisades	CPC	50-255	OL	III	C-E	05-23-80	81-06(05-19-81)	Closed									
						07-08-80											
						08-01-80											

Notes indicated by numbers in parentheses are located at the end of the table.

TABLE B.1 (contd)

Facility	Utility	Docket	Facility Status(1) NRC		Region	NSSS	Utility Response Date	Inspection Report and Date	Closeout Status(2)
			05-06-80	05-06-80					
Peach Bottom 2	PECO	50-277	OL	I	GE		07-02-80 10-21-81 12-01-81	86-19(11-25-86)	Closed
Peach Bottom 3	PECO	50-278	OL	I	GE		01-29-82 07-02-80 10-21-81 12-01-81 01-29-82	86-20(11-25-86)	Closed
Pilgrim 1	BECO	50-293	OL	I	GE		07-11-80	88-01(03-03-88) 86-16(05-21-86)	Closed
Point Beach 1	WEPCO	50-266	OL	III	W		07-07-80	81-12(06-05-81)	Closed(5)
Point Beach 2	WEPCO	50-301	OL	III	W		07-07-80	81-12(06-05-81)	Closed(5)
Prairie Island 1	NSP	50-282	OL	III	W		07-03-80	81-03(04-21-81)	Closed(6)
Prairie Island 2	NSP	50-306	OL	III	W		07-03-80	81-03(04-21-81)	Closed(6)
Quad Cities 1	CECO	50-254	OL	III	GE		07-07-80	80-24(10-21-80)	Closed(7)
Quad Cities 2	CECO	50-265	OL	III	GE		07-07-80	80-24(10-21-80)	Closed(7)
Rancho Seco 1	SMUD	50-312	OL	V	B&W		06-26-80 02-05-81(RO)	81-02(02-24-81)	Closed
Robinson 2	CP&L	50-261	OL	II	W		07-01-80	84-01(01-19-84)	Closed
Salem 1	PSE&G	50-272	OL	I	W		06-13-80	81-01(03-06-81)	Closed
Salem 2	PSE&G	50-311	OL	I	W		06-13-80	81-01(03-06-81)	Closed
San Onofre 1	SCE	50-206	OL	V	W		07-07-80 02-17-81 03-31-81	81-11(04-21-81)	Closed
St. Lucie 1	FPL	50-335	OL	II	C-E		07-09-80	82-09(03-24-82)	Closed
Surry 1	VEPCO	50-280	OL	II	W		07-07-80	82-25(09-30-82)	Closed
Surry 2	VEPCO	50-281	OL	II	W		07-07-80	82-25(09-30-82)	Closed

Notes indicated by numbers in parentheses are located at the end of the table.

TABLE B.1 (contd)

Facility	Facility			Utility		Facility		Status(1) NRC		Region		NSSS		Utility		Inspection		Closeout	
	Utility	Docket	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	05-06-80	Response	Date	Report	Date	Status(2)	Status(2)
TMI 1	Met-Ed/GPUN	50-289	OL	I	B&W	07-17-80	81-29(11-05-81)	Closed											
						09-02-80													
						11-26-80													
Trojan	PGE	50-344	OL	V	W	07-01-80	81-27(11-19-81)	Closed(8)											
Turkey Point 3	FPL	50-250	OL	II	W	07-09-80	81-17(09-02-81)	Closed											
						08-01-80													
Turkey Point 4	FPL	50-251	OL	II	W	07-09-80	81-17(09-02-81)	Closed											
						08-01-80													
Vermont Yankee 1	VYNP	50-271	OL	I	GE	06-20-80	83-20(08-30-83)	Closed											
Yankee-Rowe 1	YAECO	50-029	OL	I	W	07-07-80	81-02(03-17-81)	Closed											
Zion 1	CECO	50-295	OL	III	W	07-07-80	81-21(09-17-81)	Closed											
Zion 2	CECO	50-304	OL	III	W	07-07-80	81-17(09-17-81)	Closed											

Notes indicated by numbers in parentheses:

1. Facility status is based on Reference 1 (see page B-5). The following abbreviation applies to facility status: OL, operating license.
2. For the bulletin closeout criterion see page B-5.
3. Per the telephone conversation of 08-07-89 with David Passehl of the resident office, Inspection Report 80-12 is intended to close the bulletin for Cook 1,2.
4. Per the telephone call of 10-02-89 from Paul Byron (RIII), Inspection Report 81-11 is intended to close the bulletin for Davis-Besse 1.
5. Per the telephone conversation of 08-07-89 with Jack Gadzala of the resident office, Inspection Report 81-12 is intended to close the bulletin for Point Beach 1,2.
6. Per the telephone conversation of 08-09-89 with James E. Hard of the resident office, Inspection Report 81-03/81-03 is intended to close the bulletin for Prairie Island 1,2.

7. Per the NRR's evaluation of 10-27-89, Inspection Report 80-24 is sufficient to close Bulletin 80-10 for both units of Quad Cities.
8. The response of 07-01-80 for Trojan is clarified in the August 31, 1984, letter from B. D. Withers (PGE) to J. R. Miller (NRC).

#### CRITERION FOR CLOSEOUT OF BULLETIN

The utility response and a NRC/Region inspection report indicate that all requirements of the bulletin have been met.

#### REFERENCES

1. United States Nuclear Regulatory Commission, Licensed Operating Reactors, Status Summary Report, Data as of 06-30-89, NUREG-0020, Volume 13, Number 7, July 1989.
2. United States Nuclear Regulatory Commission, Code of Federal Regulations, Title 10, Chapter I, cited as 10 CFR 0.735.1, January 1, 1987.





## APPENDIX C

### Proposed Follow-up Item

#### Region I

##### Haddam Neck

The bulletin is held open in NRC Inspection Report 50-213/81-11 (01-27-82). The licensee's response to this bulletin is based on its engineering review, which is documented in licensee report EN-MO-153, dated May 27, 1980, entitled "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, and Uncontrollable Release of Radioactivity to Environment, IE Bulletin No. 80-10, CRP 80-342." During this inspection, NRC region-based inspectors reviewed this report and concluded that the licensee's response was incomplete because no non-liquid systems, such as instrument air and nitrogen systems, had been included.

In NRC Inspection Report 50-213/82-08 (01-14-83), the bulletin is referred to in a review of an on-site soil contamination investigation. However, the status of the bulletin is not mentioned.

According to NRC Inspection Report 50-213/89-02 (05-03-89), a licensee technician found an unmonitored radioactive release path that had existed through the Spent Fuel Building floor drains. The issue of Bulletin 80-10 was brought to the attention of the utility in the transmittal letter for this inspection report. Based on the discussion between the NRR project manager and senior resident inspector, the resident inspector will continue to follow-up this issue.



## 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 and Wilcox Company
C-E	Combustion Engineering Incorporated
CECO	Commonwealth Edison Company
CFR	Code of Federal Regulations
ConEd	Consolidated Edison Company of New York, Inc.
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
FPC	Florida Power Corporation
FPL	Florida Power & Light Company
FSAR	Final Safety Analysis Report
GA	General Atomic
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)
IELPCO	Iowa Electric Light and Power Company
IMECO	Indiana and Michigan Electric Company
IR	Inspection Report (NRC/Region)
JCP&L	Jersey Central Power and Light Company
LER	Licensee Event Report
Met-Ed	Metropolitan Edison Company
MYAPCO	Maine Yankee Atomic Power Company
NMP	Niagara Mohawk Power Company
NNECO	Northeast Nuclear Energy Company
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
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
PSCC	Public Service Company of Colorado
PSE&G	Public Service Electric and Gas Company
R	Region (NRC)
RG&E	Rochester Gas and Electric Corporation
RO	Reportable Occurrence
SCE	Southern California Edison Company
SDI	Shut Down Indefinitely
SMUD	Sacramento Municipal Utility District
TECO	Toledo Edison Company
TMI	Three Mile Island
TVA	Tennessee Valley Authority
VEPCO	Virginia Electric and Power Company
VYNP	Vermont Yankee Nuclear Power Corporation
W	Westinghouse Electric Corporation
WEPCO	Wisconsin Electric Power Company
WPS	Wisconsin Public Service Corporation
YAECO	Yankee Atomic Electric Company

**BIBLIOGRAPHIC DATA SHEET**

(See instructions on the reverse)

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PARAMETER IE-193

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Elm Grove, Wisconsin 53122

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Division of Operational Events Assessment  
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U.S. Nuclear Regulatory Commission  
Washington, DC 20555

10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

Documentation is provided in this report for the closeout of IE Bulletin 80-10 regarding contamination of nonradioactive systems resulting in the potential for unmonitored, uncontrolled release of radioactivity to the environment. Closeout is based on the documentation and verification of four actions required by the bulletin for holders of an operating license for a nuclear power facility at the time the bulletin was issued (05-06-80). The bulletin was issued for information to holders of a construction permit for a nuclear power facility. Evaluation of utility responses and NRC/Region inspection reports in accordance with the closeout criterion indicates that the bulletin is closed for 65 (98%) of the 66 nuclear power facilities to which it was issued for action. A follow-up item is proposed for the facility with open status, for the use of NRC regional inspectors in ensuring successful completion of required actions. When the bulletin is closed as anticipated for the facility which requires follow-up (see page C-1), the concerns of the bulletin will have been resolved completely. Background information is supplied in the Introduction and Appendix A.

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

Closeout of IE Bulletin 80-10

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SYSTEM AND RESULTING POTENTIAL FOR UNMONITORED, UNCONTROLLED  
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