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JUL 29 1982

MEMORANDUM FOR: Joseph D. Lafleur, Jr., Deputy Director  
 Office of International Programs

FROM: Carlyle Michelson, Director  
 Office for Analysis and Evaluation  
 of Operational Data

SUBJECT: IRS REPORTS

Please forward the following enclosed IRS reports to Mr. Otsuka of the NEA:

1. Effects of Fire Protection System Actuation on Safety-Related Equipment.
2. Seismic Qualification of Safety-Related Systems.
3. Centrifugal Charging Pump (CCP) Miniflow Recirculation Valve Closure causes CCP to fluctuate.

Original Signed by  
 Carlyle Michelson

Carlyle Michelson, Director  
 Office for Analysis and Evaluation  
 of Operational Data

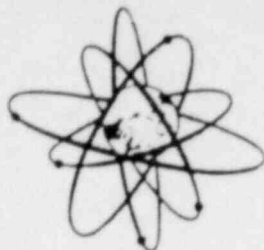
Enclosure:  
 As stated

bcc w/enclosure:  
 C. Michelson, AEOD  
 C. Heltemes, AEOD  
 W. Lanning, AEOD  
 D. Zukor, AEOD

*Central Files*  
*aeod R/F*  
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*NRC PDR*

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OFFICE	ROAB/AEOD	ROAB/AEOD	DD/AEOD	D/AEOD	AEOD		
SURNAME	DZukor:hcg	WLanning	CHeltemes	CMichelson	KSeyfrit		
DATE	6/28/82	7/15/82	7/27/82	7/28/82	7/2/82		



**No. IRS**

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i>	
Effects of Fire Protection System Actuation on Safety-Related Equipment	
<i>Country - Pays</i>	<i>Date of Incident - Date de l'incident</i>
United States	Numerous
	<i>Type of Reactor - Type de réacteur</i>
	_____
<i>Plant - Centrale</i>	<i>Licensee - Détenteur du permis d'exploitation</i>
Numerous	_____
<i>Unit N° - Tranche n°</i>	<i>Manufacturer - Fabricant</i>
	_____
<i>Power - Puissance</i>	<i>First Commercial Operation -</i>
_____ MWe(net)	<i>Date de mise en service</i>
<i>Systems or Components Affected - Systèmes ou composants affectés</i>	
_____	
<i>Initial Plant Condition - Etat initial de la tranche</i>	
_____	
<i>Way in which Incident was Detected ?</i>	
<i>Comment l'incident a-t-il été détecté ?</i>	
_____	
<i>Radiation Exposure or Radioactivity Release -</i>	
<i>Exposition aux rayonnements ou libération de radioactivité</i>	
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*Date of Receipt - Date de réception*

*Date of Distribution - Date de distribution*

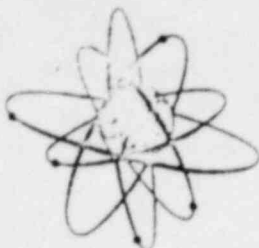
Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et enseignements tirés (signification de l'incident pour la sûreté) doivent figurer

The following events are included in a single IRS report because they represent incidents where safety-related equipment subjected to water spray from the fire protection system was rendered inoperable. The events also indicated that spurious actuation of fire protection systems can be initiated by operator error, by steam, high humidity, or maintenance activities in the vicinity of fire protection systems detectors. Potential interactions between fire protection systems and other systems that affect the operation of safety-related systems need to be thoroughly understood. All safety-related and essential support equipment located in areas where fire protection spray systems are provided must perform its intended function both during and following the activation of the fire protection system.

Attached reports:

1. Water in Diesel Generator Fuel Oil Storage Tanks
2. Hydrogen Recombiner Discovered Inoperable
3. Inadequate Ventilation for Engineered Safety Features Equipment
4. Inadvertent Actuation of Fire Suppression System
5. Spurious Actuation of Fire Suppression System
6. Damage Caused by Fire Suppression System



# NEA/IRS

## INCIDENT REPORTING SYSTEM

**No. IRS**

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i>	
Water in Diesel Generator Fuel Oil Storage Tanks	
<i>Country - Pays</i>	<i>Date of Incident - Date de l'incident</i>
United States	May 28, 1981
	<i>Type of Reactor - Type de réacteur</i>
	PWR
<i>Plant - Centrale</i>	<i>Licensee - Détenteur du permis d'exploitation</i>
Surry	Virginia Electric Power Company
<i>Unit N° - Tranche n°</i> 2	<i>Manufacturer - Fabricant</i>
	Westinghouse
<i>Power - Puissance</i>	<i>First Commercial Operation -</i>
775 MWe(net)	<i>Date de mise en service</i> May 1973
<i>Systems or Components Affected - Systèmes ou composants affectés</i>	
Emergency Diesel Generator Fuel Oil Tanks	
<i>Initial Plant Condition - Etat initial de la tranche</i>	
100% power	
<i>Way in which Incident was Detected ?</i>	
<i>Comment l'incident a-t-il été détecté ?</i>	
Routine sampling	
<i>Radiation Exposure or Radioactivity Release -</i>	
<i>Exposition aux rayonnements ou libération de radioactivité</i>	
None	

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*Date of Distribution - Date de distribution*

Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et

### Event Description

There are three diesel generators that serve both Units 1 and 2 at Surry. The generators are supplied with diesel fuel by the system shown in Figure 1. There is one above ground tank (1-HS-TK-1) which supplies fuel for two underground seven-day storage tanks. The underground tanks then supply the one-day storage tanks (each line of the underground tanks feeds all three one-day tanks). The one-day tanks then supply the diesel generators.

On May 28, 1981, a routine sample of one of the underground tanks revealed excess water. It was determined that water from the fire suppression system was inadvertently added to the above ground tank.

The fire suppression system employs a foam suppressant which is mixed with water. The water flows from a fire hydrant through a manual valve in two inch pipe through a foam induction nozzle to a sparger inside the fuel tank. The operation of the system requires the manual connection of the foam cannister to the nozzle and opening the manual valve and fire hydrant. The addition of water to the tank occurred when a hose was connected to the fire hydrant to test the reactor shield tank prior to its installation. Evidently, the manual valve was open, which provided a flow path to the fuel storage tank after the hydrant was opened. After the water had been added to the storage tank the tank was isolated and fuel oil was drained until the sample showed negligible amounts of water. However, the sample was not taken from the lowest elevation of the tank, which resulted in water accumulating in the underground and day tanks.

### Cause of Event

The cause of this event has been determined to be inadequate administrative controls for the fire suppression system.

### Reason for Reporting

Since the above ground tank supplies fuel to the underground tanks and ultimately the diesel generators, this is reportable pursuant to criterion 6, "Incidents of Potential Safety Significance."

### Actions Taken

Immediate action taken was to drain the water via the transfer suction strainer drains. Subsequently all tanks were sampled and the water content was within allowable limits.

The licensee has also implemented a number of long-term measures to prevent recurrence of a similar event and to ensure the quality of the diesel fuel stored in the above ground tank. These include:

1. Administrative controls to restrict use of fire hydrant to only fire protection.
2. Monthly surveillance procedures to test the diesel fuel oil above ground, underground, and day tanks for water. Additional surveillance testing is required if the fire hydrant has been opened.

3. The manual valve in the water supply piping is locked closed and tagged.
4. A drain line downstream of the foam induction nozzle is locked-open to indicate water leakage into the fire suppression system. Daily surveillance requirement on the drainline has been added to the operator's log. Corrective action has been specified when leakage is detected.
5. The surveillance procedure for the monthly test identifies the sample location by valve number corresponding to the lowest elevation in the tank.

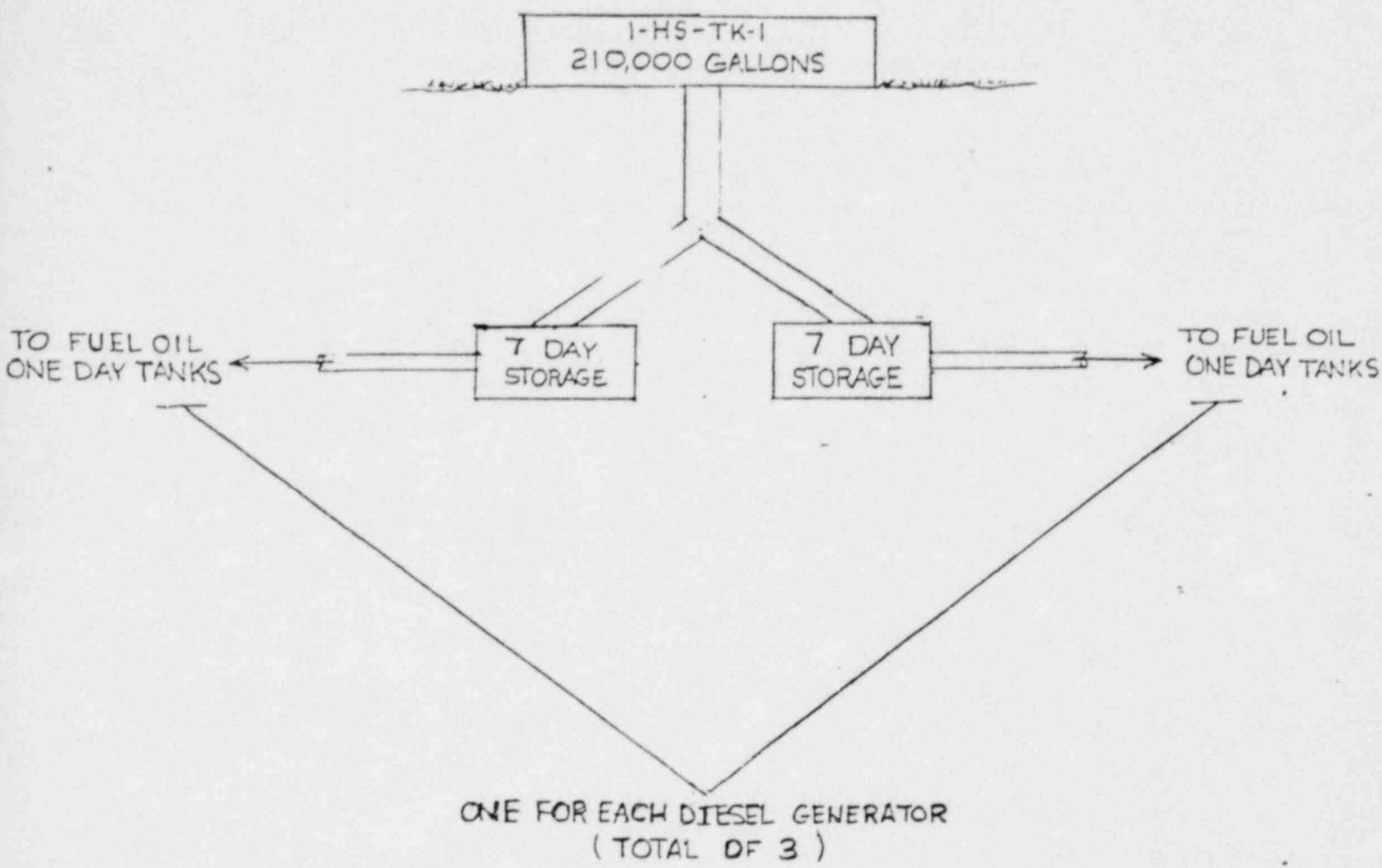
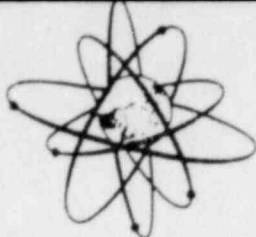


FIGURE 1



**No. IRS**

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i> Hydrogen Recombiner Discovered Inoperable	
<i>Country - Pays</i> United States	<i>Date of Incident - Date de l'incident</i> July 28, 1981
	<i>Type of Reactor - Type de réacteur</i> PWR
<i>Plant - Centrale</i> Trojan	<i>Licensee - Détenteur du permis d'exploitation</i> Portland General Electric Company
<i>Unit N° - Tranche n°</i>	<i>Manufacturer - Fabricant</i> Westinghouse
<i>Power - Puissance</i> 1130 MWe(net)	<i>First Commercial Operation - Date de mise en service</i> May 1976
<i>Systems or Components Affected - Systèmes ou composants affectés</i> Hydrogen Recombiner	
<i>Initial Plant Condition - Etat initial de la tranche</i> Steady State at 90% Power	
<i>Way in which Incident was Detected ? Comment l'incident a-t-il été détecté ?</i> Operator tour	
<i>Radiation Exposure or Radioactivity Release - Exposition aux rayonnements ou libération de radioactivité</i> None	

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Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et enseignements tirés (signification de l'incident pour la sûreté) doivent figurer sur les pages suivantes.



### Event Description

On July 28, 1981, during steady state operations with the plant at 80% power, the control room operator noticed that control power had been lost to the "B" train hydrogen recombiner.

### Cause of Event

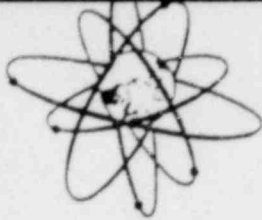
The loss of control power was due to inadvertent activation of the fire protection deluge system while welding in the electrical penetration area. This caused a short circuit and loss of control power to hydrogen recombiner.

### Reason for Reporting

This occurrence is a procedural maintenance deficiency and is reportable pursuant to criterion 3, "Significant Deficiencies in Design, Construction, Operation, or Safety Evaluation." It is also a potential generic problem and so is reportable under criterion 4.

### Actions Taken

Corrective action was taken to replace the shorted control power transformer. The hydrogen recombiner was then tested and declared operable. In addition, maintenance personnel were counseled concerning proper ventilation for welding in enclosed areas and burning permits are under revision to verify that ventilation requirements are met.



**No. IRS**

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i>	
Inadequate Ventilation for Engineered Safety Features Equipment	
<i>Country - Pays</i>	<i>Date of Incident - Date de l'incident</i>
United States	September 10, 1981
	<i>Type of Reactor - Type de réacteur</i>
	PWR
<i>Plant - Centrale</i>	<i>Licensee - Détenteur du permis d'exploitation</i>
Trojan	Portland General Electric Company
<i>Unit N° - Tranche n°</i>	<i>Manufacturer - Fabricant</i>
	Westinghouse
<i>Power - Puissance</i>	<i>First Commercial Operation -</i>
1130 MWe(net)	<i>Date de mise en service</i> May 1976
<i>Systems or Components Affected - Systèmes ou composants affectés</i>	
Preferred Instrument and Control Power Buses	
<i>Initial Plant Condition - Etat initial de la tranche</i>	
100% power	
<i>Way in which Incident was Detected ?</i> <i>Comment l'incident a-t-il été détecté ?</i>	
High Ambient Temperatures	
<i>Radiation Exposure or Radioactivity Release -</i> <i>Exposition aux rayonnements ou libération de radioactivité</i>	
None	

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Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et enseignements tirés (signification de l'incident pour la sûreté) doivent figurer sur les pages suivantes.

### Event Description

It was determined that inadequate ventilation for the "A" train preferred instrument and control power buses existed as a result of the installation of a three-hour fire barrier between the "A" and "B" instrument and control power trains.

In response to the NRC Fire Protection SER dated March 9, 1978, and letter of March 18, 1980 requiring a three-hour rated fire barrier between trains of ESF electrical equipment, a fire wall was built to provide separation of the "A" and "B" train preferred instrument and control power buses. The installation of this wall created a new room which enclosed those buses for the "A" train.

During operation, high ambient temperatures in the room led to an engineering investigation which revealed that the ventilation equipment in the room was not capable of maintaining room temperatures in the recommended range for ESF-related equipment operation and was not seismically qualified.

### Cause of Event

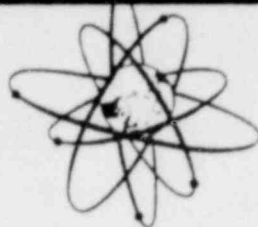
The cause of the occurrence was an inadequate interdisciplinary review which resulted in an incomplete safety evaluation for the plant design change that created the fire barrier. Calculation of cooling requirements for the installed heat loads versus cooling capability of the installed ventilation equipment were not performed. In addition, the ventilation support system's seismic qualification was not verified. The supply of cooling water to the cooler was not safety grade, nor was the motor supplied with Class 1E power.

### Reason for Reporting to IRS

This event is being reported pursuant to criteria 3, "Significant Deficiencies in Design, Construction, Operation, or Safety Evaluation." It is also a potential generic problem and is, therefore, reportable pursuant to criterion 4.

### Actions Taken

Initial action taken was to install portable blowers through the open doors of the fire barrier and institute an hourly fire inspection by plant security personnel. After an engineering analysis to determine air flow and cooling requirements in the room, a 100-square foot area of the fire barrier was removed at the points of air flow entry and exit. Upon completion of this modification to the barrier, temperatures in the room dropped from 100°F to approximately 75°F. Action has been taken to increase the cooling capability of the room ventilation system and provide support systems that meet ESF design criteria. Upon completion of these modifications, the three-hour fire barrier will be restored.



**No. IRS**

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i> Inadvertent Actuation of Fire Suppression System	
<i>Country - Pays</i> United States	<i>Date of Incident - Date de l'incident</i> November 14, 1981
	<i>Type of Reactor - Type de réacteur</i> PWR
<i>Plant - Centrale</i> Ginna	<i>Licensee - Détenteur du permis d'exploitation</i> Rochester Gas and Electric Company
	<i>Manufacturer - Fabricant</i> Westinghouse
<i>Unit N° - Tranche n°</i>	
<i>Power - Puissance</i> 490 MWe(net)	<i>First Commercial Operation - Date de mise en service</i> March 1970
<i>Systems or Components Affected - Systèmes ou composants affectés</i> Control Rods	
<i>Initial Plant Condition - Etat initial de la tranche</i> 100% Power	
<i>Way in which Incident was Detected ? Comment l'incident a-t-il été détecté ?</i> Alarms	
<i>Radiation Exposure or Radioactivity Release - Exposition aux rayonnements ou libération de radioactivité</i> None	

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Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et enseignements tirés (signification de l'incident pour la sûreté) doivent figurer sur les pages suivantes.

### Event Description

During startup testing of the new fire suppression system, an inadvertent actuation caused various power cabinets and electrical equipment in the turbine and intermediate buildings to be sprayed. A manual reactor trip was initiated at 10:26 am following indication of two dropped rods and numerous control room annunciator alarms. The dropped rods were attributed to a trip of the "A" RPS MG set which may have reduced voltage enough to drop two rods. All systems functioned properly following the trip and the plant was maintained in "hot shutdown" status while operability of equipment affected by the suppression system was assured.

### Cause of Event

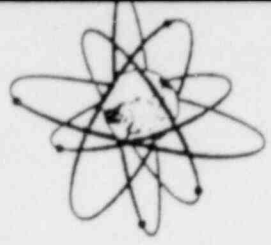
Failure to follow test procedures caused actuation of several portions of the fire suppression system.

### Reason for Reporting

This event is being reported pursuant to criteria 2.4, "Degradation of Systems Required to Control Criticality." It is also a potential generic problem and is therefore reportable according to criterion 4.

### Actions Taken

All affected components were repaired.



**No. IRS**

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i> Spurious Actuation of Fire Suppression System	
<i>Country - Pays</i> United States	<i>Date of Incident - Date de l'incident</i> November 30, 1981
	<i>Type of Reactor - Type de réacteur</i> BWR
<i>Plant - Centrale</i> Dresden	<i>Licensee - Détenteur du permis d'exploitation</i> Commonwealth Edison
<i>Unit N° - Tranche n°</i> 3	<i>Manufacturer - Fabricant</i> General Electric
<i>Power - Puissance</i> 794 MWe(net)	<i>First Commercial Operation - Date de mise en service</i> October 1971
<i>Systems or Components Affected - Systèmes ou composants affectés</i> High Pressure Coolant Injection System	
<i>Initial Plant Condition - Etat initial de la tranche</i> 14% Power, Startup in Progress	
<i>Way in which Incident was Detected ? Comment l'incident a-t-il été détecté ?</i> Fire System Initiation Alarm Sounded	
<i>Radiation Exposure or Radioactivity Release - Exposition aux rayonnements ou libération de radioactivité</i> None	

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*Date of Distribution - Date de distribution*

Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et enseignements tirés (signification de l'incident pour la sûreté) doivent figurer sur les pages suivantes.

### Event Description

Unit startup was in progress when the control room received a HPCI room fire system initiation alarm from the south ionization smoke detector. The HPCI system was declared inoperable and the HPCI steamline isolated. An Unusual Event was declared and a normal unit shutdown initiated.

### Cause of Event

The cause of the fire system initiation is believed to have been a buildup of humidity/steam vapor in the HPCI room. The smoke detector operates on ionization principle and is usually activated by the presence of combustion products. Discussions with the manufacturer of the smoke detector indicated that the detector may actuate if exposed to a high concentration of water vapor.

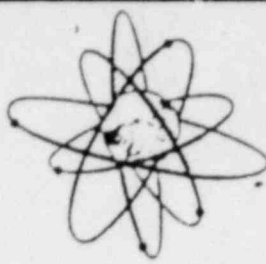
The HPCI room has had a history of high humidity/steam because of steam leaks and the leakoff/drain system which runs to the sump in the HPCI room. Temporary ventilation was not operating prior to the occurrence which would have reduced the water vapor concentration. The smoke detector continued to intermittently alarm until the ventilation was restored.

### Reason for Reporting

This event is being reported pursuant to criterion 2.5, "Degradation of Systems Required to Control the System Pressure or Temperature." It is also a potential generic problem and so is reportable according to criterion 4.

### Actions Taken

Ventilation to the HPCI room was restored and a review was made of the fire protection detectors and the ventilation system for possible modification to improve reliability.



No. IRS

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i>	
Damage Caused by Fire Suppression System	
<i>Country - Pays</i>	<i>Date of Incident - Date de l'incident</i>
United States	January 9, 1982
	<i>Type of Reactor - Type de réacteur</i>
	BWR
<i>Plant - Centrale</i>	<i>Licensee - Détenteur du permis d'exploitation</i>
Oyster Creek	GPU Nuclear, Inc.
<i>Unit N° - Tranche n° 1</i>	<i>Manufacturer - Fabricant</i>
	General Electric
<i>Power - Puissance</i> MWe(net)	<i>First Commercial Operation - December 1969</i> <i>Date de mise en service</i>
<i>Systems or Components Affected - Systèmes ou composants affectés</i>	
Water Level and Pressure Indicators	
<i>Initial Plant Condition - Etat initial de la tranche</i>	
Cold Shutdown	
<i>Way in which Incident was Detected ?</i> <i>Comment l'incident a-t-il été détecté ?</i>	
Activation of Fire Suppression System	
<i>Radiation Exposure or Radioactivity Release -</i> <i>Exposition aux rayonnements ou libération de radioactivité</i>	
None	

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Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et (importance de sécurité de l'incident pour la sûreté) doivent figurer



### Event Description

With the plant in cold shutdown at about 9:50 am, the auxiliary pump on the reactor water cleanup system seized and its motor overheated. Smoke from the motor activated the fire suppression system on the north side of the reactor building at the 50-foot elevation. The fire suppression system was secured at 10:25 am. Water spray from the suppression system shorted out the position indication on one torus vent valve, damaged one reactor lo-lo water level sensor and one reactor high pressure sensor.

### Cause of Event

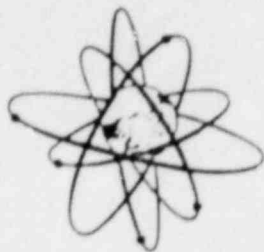
The cause of the event was water spray from the fire suppression system.

### Reason for Reporting

This event is being reported pursuant to criterion 3, "Significant Deficiencies in Design, Construction, Operation, or Safety Evaluation." It is also a potential generic problem and so is reportable according to criterion 4.

### Actions Taken

Damaged equipment was repaired and returned to service.



**No. IRS**

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i> Seismic Qualification of Safety-Related Systems	
<i>Country - Pays</i> United States	<i>Date of Incident - Date de l'incident</i> September 27, 1981
	<i>Type of Reactor - Type de réacteur</i> PWR
<i>Plant - Centrale</i> Diablo Canyon	<i>Licensee - Détenteur du permis d'exploitation</i> Pacific Gas and Electric Company
	<i>Manufacturer - Fabricant</i> Westinghouse
<i>Unit N° - Tranche n°</i> 1	
<i>Power - Puissance</i> 1084 MWe(net)	<i>First Commercial Operation - Date de mise en-service</i> Not yet commercial
<i>Systems or Components Affected - Systèmes ou composants affectés</i> Containment Building, Auxiliary Building, Piping Runs and Piping Supports in Component Cooling Water System, Residual Heat Removal System, and Auxiliary Feedwater System.	
<i>Initial Plant Condition - Etat initial de la tranche</i> Preoperational - Zero Power	
<i>Way in which Incident was Detected ? Comment l'incident a-t-il été détecté ?</i> By company engineers during design activity.	
<i>Radiation Exposure or Radioactivity Release - Exposition aux rayonnements ou libération de radioactivité</i> None	

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Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et

### Event Description

Prior to start of fuel loading in Unit 1, company engineers discovered an error in the engineering diagrams used to locate Vertical Seismic Floor Response (VSFR) Spectra for use in the plant equipment and systems seismic design. This error indicates that some portions of the plant may not satisfy the appropriate seismic design criteria. Fuel had not been loaded before the errors were discovered.

### Cause of Event

Engineering diagrams for Unit 2 were mistakenly used for analyses of Unit 1 annulus area. Unit 1 is a mirror image of Unit 2 while the analysis assumed they were identical. In addition, errors in the diagrams seriously affected the seismic design analyses for some portions of Unit 2. Subsequent investigation into this issue revealed additional design errors indicating a general failing of the licensee's design quality controls for service-type contractors.

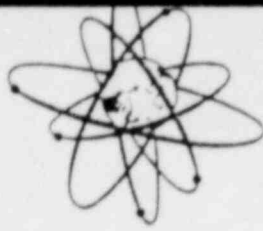
### Reason for Reporting to IRS

This event is reportable under criteria 3, "Significant Deficiencies in Design, Construction, Operation, or Safety Evaluation." This event has also been designated an abnormal occurrence for major deficiencies in management controls.

### Actions Taken

The operating license for Unit 1 was suspended indefinitely on November 19, 1981. New VSFR spectra have been generated and a seismic reverification program has been initiated. This program involves having an independent contractor verify the seismic design of affected systems, piping, equipment, and buildings.

The adequacy of the quality assurance program at Diablo Canyon is under review by the NRC.



**No. IRS**

RESTRICTED  
DIFFUSION RESTREINTE

<i>Title - Titre</i>	
Centrifugal Charging Pump (CCP) Miniflow Recirculation Valve Closure Causes CCP to Fluctuate.	
<i>Country - Pays</i>	<i>Date of Incident - Date de l'incident</i>
United States	October 22, 1981
	<i>Type of Reactor - Type de réacteur</i>
	PWR
<i>Plant - Centrale</i>	<i>Licensee - Détenteur du permis d'exploitation</i>
Trojan	Portland General Electric
<i>Unit N° - Tranche n°</i>	<i>Manufacturer - Fabricant</i>
	Westinghouse
<i>Power - Puissance</i>	<i>First Commercial Operation -</i>
1130 MWe(net)	<i>Date de mise en service</i> 5/76
<i>Systems or Components Affected - Systèmes ou composants affectés</i>	
CCP miniflow recirculation valve.	
<i>Initial Plant Condition - Etat initial de la tranche</i>	
From 100% Power to mode 3 after trip	
<i>Way in which Incident was Detected ?</i>	
<i>Comment l'incident a-t-il été détecté ?</i>	
Operator Observation	
<i>Radiation Exposure or Radioactivity Release -</i>	
<i>Exposition aux rayonnements ou libération de radioactivité</i>	
None	

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Event description, possible causes, actions taken or planned and lessons learned (safety significance of incident) should be included in the following pages.

Description de l'incident, causes possibles, mesures prises ou projetées et enseignements tirés (signification de l'incident pour la sûreté) doivent figurer sur les pages suivantes.

### Event Description

On October 22, 1981, following a partial loss of plant electrical power and subsequent reactor trip, a Centrifugal Charging Pump (CCP) had to be tripped because the CCP miniflow recirc valve had been closed. The miniflow recirc valve, MO-8110, had been closed several weeks earlier to increase the "B" CCP charging flow to match the 120 gpm letdown flow. At 1410 on October 22, a reactor trip occurred due to the loss of 12.47 KV bus H1, causing the loss of 4160 V ESF bus A1 and a subsequent starting of the "A" emergency diesel generator. The normal shutdown sequencer actuation followed. This started the "A" CCP. The "B" CCP was already running. When the "A" CCP was shut off at 1524, charging flow dropped to zero and motor current on the "B" CCP was fluctuating. The "A" CCP was then restarted and the "B" CCP was tripped. The "B" CCP was later tested satisfactorily. The apparent cause of the fluctuation was inadequate flow through the "B" CCP due to both pumps operating with MO-8110 closed.

### Cause

The cause of this event is that normal operating procedures did not explicitly state that the plant should not be operated with MO-8110 closed. However, an Inspection and Enforcement bulletin (80-18) had been issued on July 27, 1980 stating that Westinghouse plants should not close the CCP miniflow recirc valves while in favorable operating conditions (explained in depth in the bulletin).

### Reason for Reporting

Because this event is an example of a personnel error and a procedural deficiency which could result in the loss of plant capability to perform essential safety functions, it is reportable pursuant to criterion 3 "Significant Deficiencies in Design, Construction, Operation, or Safety Evaluation."

### Actions Taken

Immediate action taken was to turn off the "B" CCP after the motor fluctuations were observed. No problems were noted and the pump performance test was completed without negative results. The miniflow recirc valve was opened with instruction not to close it again.

The permanent corrective action includes a requirement in the Operations "Night Orders" that a special watch be posted at the CCP control panel whenever its miniflow valve is isolated. Additionally a precaution warning against closing a CCP miniflow valve will be added to the applicable Operating Instructions.