



**Consumers
Power
Company**

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N.J. POWER CO.

COPY

General Offices: 212 West Michigan Avenue, Jackson, MI 49201 • (517) 788-0550

December 3, 1984

Mr Fred Morley
District Supervisor
Plainwell District Office Building
621 North 10th Street
PO Box 355
Plainwell, MI 49080

FILE NO: P10.2.1

INCIDENT NO: PAL-84-11-AD103

This is in regard to NPDES Permit No MI 0001457 for the Company's Palisades Plant. In accordance with Part II, A4, the attached "NPDES Notification," Incident No PAL-84-11-AD103, is submitted as a report of an apparent bypassing of wastewater treatment facilities at this plant.

If you have any questions regarding the attached report, please contact this office.

Ronald L Fobes

R L Fobes
Senior Environmental Advisor

CC USEPA, Enforcement Div, Region V
BCC RBDeWitt, P-26-117B
KFBieszke, P-24-329
BDJohnson, P-24-606
BWMarguglio, JSC-220A
JFFirlit, Palisades
JRSchepers, Palisades
SFPierce, Palisades
ATUdrys, M-1023

8506200458 850531
PDR ADOCK 05000255
R PDR

OC1284-0003A-EN03-TP13

NPDES Notification
Apparent Difference From Daily Average/Maximum Limitation
November 29, 1984

Plant: Palisades

Permit No: MI 0001457

Outfall Description: Turbine Sump Oil Separator
Discharge (00G)

Outfall Code No: 800218

Parameter: NA

Parameter Code No: NA

1. Date of Incident: 11/20/84 and 11/21/84
2. Identification of specific effluent limitation or monitoring requirement affected:

Any diversion from, or bypass of, facilities necessary to maintain compliance with terms and conditions of the permit is prohibited.

3. Description of Incident:

From 11/20/84 at 1910 hours until 11/21/84 at 0740 hours, the plant's oily waste treatment system was temporarily bypassed because of an emergency situation where the turbine building sump became flooded. A portable sump pump was utilized to pump the floodwater directly to the plant's main discharge (001), bypassing the oily waste treatment system. Estimated total discharge flow was less than 7000 gallons.

4. Apparent Cause:

During the plant's return to power, the main boiler feed pumps were placed in operation. Leakage from these pumps (estimated at 100 gpm of demineralized water) resulted in the flooding of the turbine building sump in excess of the sump pump's capacity.

5. If not immediately corrected, the anticipated time the condition is expected to continue:

NA

6. Corrective Action - The following corrective action was taken or will be taken to reduce, eliminate and prevent recurrence:

The feed pump leakage was reduced to where the turbine building sump pump could handle the inflow. Two samples of the undiluted floodwater were collected for oil and grease analysis. The analytical results will be included in the MOR for November 1984. The samples appeared visually clear of any oil or grease.

7. Additional Comments:

The final discharge to Lake Michigan (Outfall 001) showed no visible oil.

8. Signed: R L Fobes *RLF*



**Consumers
Power
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General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

May 10, 1985

M905

Mr Galen Kilmer
Groundwater Quality Division
Michigan Department of Natural Resources
621 Tenth Street
PO Box 355
Plainwell, MI 49080

REPORTS OF OIL, SALT OR POLLUTING MATERIAL LOSS -
DEMINERALIZER REGENERANTS AND CAUSTIC LOSSES
PALISADES PLANT, COVERT, MICHIGAN

Enclosed are two Reports of Oil, Salt or Polluting Material Losses, Form R4616, applicable to recent losses of demineralizer regenerants and caustic soda at the Company's Palisades Plant near Covert, Michigan. These losses were discovered at 11:00 PM on May 1, 1985 and 1:15 PM on May 2, 1985, respectively. Both events were reported to the Plainwell District MDNR at 4:30 PM on May 2, 1985.

Should you require any additional information regarding this matter, please contact this office.

Ronald L Fobes

R L Fobes
Senior Environmental Advisor

BCC ATUdry, M-1023
DHAndrews, Palisades
JRSchepers, Palisades
JFFirlit, Palisades
BDJohnson, P-24-606

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
REPORT OF OIL, SALT OR POLLUTING MATERIAL LOSSES

Pursuant to the provisions of Act 245 of the Public Acts of Michigan 1929 as amended, regulations have been issued which require that all owners, managers or operators of vessels, oil storage or on land facilities shall notify the Water Resources Commission or his authorized representative of oil, salt and polluting material losses. This notification shall be made promptly by telephone or telegraph, giving briefly the particulars, and by mail, giving a detailed account of events and conditions.

Date May 3, 1985		Company Name Consumers Power Company - Palisades	
Location of Loss (Be Specific) Palisades Plant, 277780 Blue Star Memorial Highway, Covert, MI 49043			
Neutralizer Tank (T921) See Palisades SPCC/PIP App C, May 2, Location "N"			
Material Lost Caustic Soda (NaOH)	Amount 1875 gallons	Name of Surface Water Involved Not Applicable	
Date Loss was Discovered May 2, 1985		Time of Discovery 1315	
Name of Department of Natural Resources Representative Contacted Rich Sadowski, MDNR, Plainwell Field Office			
Telephoned or Telegraphed by Whom David H Andrews, Laboratory Supv-Environmental			Time 5/2/85 1630
Cause of Loss (Include Type of Equipment and Other Details) See Attached Report			
Nature of Loss (Include Complete Description of Damage) See Attached Report			
Additional Comments (Include Method of Control, Plans for Prevention of Recurrence, etc.) See Attached Report			
Company Name Consumers Power Company-Palisades		By (Signature) David H Andrews/RLFobes	

24-Hr Emergency Notification Number
(800) 292-4706

Return this form to:

• Environmental Department
Parnall Road
Jackson, Michigan

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
REPORT OF OIL, SALT OR POLLUTING MATERIAL LOSSES

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Date May 3, 1985		Company Name Consumers Power Company - Palisades	
Location of Loss (Be Specific) Palisades Plant, 277780 Blue Star Memorial Highway, Covert, MI 49043			
Neutralizer Tank (T921) See Palisades SPCC/PIP App C, May 2, Location "N"			
Material Lost Demineralizer Regenerants		Amount 840 gallons	Name of Surface Water Involved Not Applicable
Date Loss was Discovered May 1, 1985		Time of Discovery 2300	
Name of Department of Natural Resources Representative Contacted Rich Sadowski, MDNR, Plainwell Field Office			
Telephoned or Telegraphed by Whom David H Andrews, Laboratory Supv-Environmental			Time 5/2/85 1630
Cause of Loss (Include Type of Equipment and Other Details) See Attached Report			
Nature of Loss (Include Complete Description of Damage) See Attached Report			
Additional Comments (Include Method of Control, Plans for Prevention of Recurrence, etc.) See Attached Report			
Company Name Consumers Power Company-Palisades		By (Signature) David H Andrews/RLFobes	

24-Hr Emergency Notification Number
(800) 292-4706

Return this form to:

Environmental Department
Parnall Road
Jackson, Michigan

MI0585-0017A-EN03

R4616
10/73

CONSUMERS POWER COMPANY
PALISADES PLANT
Demineralizer Regenerants & Caustic Losses
May 1 and 2, 1985
Narrative Report

I. Sequence of Events Leading to and Involving the Spill

April 30 2020 Hrs	Tank T921 filled with demineralizer regenerants
May 1 1915	Caustic added to T921; no leak at this time
*May 1 2300	Chemistry personnel sampled T921; leak discovered, pH 1.9, leak estimated at 5 gal/min
May 1 2315	25 gal caustic added to T921
May 1 2340	Chemistry personnel sampled T921, pH 2.33
May 2 0032	T921 contents released to Lake Michigan via outfalls 00F/001; release met requirements of NPDES Permit MI0001457
May 2 0148	T921 at 50% level; leak has ceased
May 2 0235	T921 empty (release completed)
May 2 1115	Received load of caustic (50%NaOH) for Tank T907, makeup demineralizer caustic tank
May 2 1315	Overflowed T907 to chem sump; chem sump automatic pump to neutralizer tank (normal discharge point)
May 2 1315	Neutralizer tank leaking caustic to sand under tank: concentration is approximately 20% Sodium Hydroxide
May 2 1400	Started filling T921 to 50% in preparation to neutralize contents, pH of leak 14
May 2 1530	pH 13.5; requested 60 gallons acid added

*It was previously reported that discovery was at 2315 rather than 2300.

May 2	1602	Pumping leaking water from sand area under T921 to chem sump (pumps manually off)
May 2	1610	pH 13
May 2	1625	60 gallons acid added to T921
May 2	1700	T921 pH 12.02 (high solids), requested 22 gal acid
May 2	1715	Acid (22 gal) added
May 2	1750	T921 pH = 1.7 (solids = 12.0 mg/l)
May 2	1820	Started release of T921 to Lake Michigan through outfalls OOF/001
May 2	1930	Neutralizer tank empty; release secured
May 2	2100	Lab Supv-Env requested valves and pump breakers on systems leading to neutralizer tank be caution tagged to prevent a third accident

II. Nature of the Loss

The demineralizer regenerants lost from 2300 hrs on 5/1 to 0148 hours on 5/2 included 200 gallons during the 40 minutes from discovery until the pH was analyzed at 2.33 and 640 gallons from then until the leak ceased at 0148 hours on 5/2. The 840 gallons were contained in the sand immediately under the east half of the tank (T921). As a precautionary measure, one bag of slaked lime was spread in the area to insure neutralization of the acid. These regenerants contained an equivalent of 11.8 lbs of unneutralized sulfuric acid lost to the soil ($200 \text{ gal} \times 3.785 \text{ l/gal} \times 0.013 \text{ eq/l} \times 49 \text{ g H}_2\text{SO}_4/\text{eq} \times 1 \text{ lb}/454 \text{ g}$) + ($640 \text{ gal} \times 3.785 \text{ l/gal} \times 0.0046 \text{ eq/l} \times 49 \text{ g H}_2\text{SO}_4/\text{eq} \times 1 \text{ lb}/454 \text{ g}$) = 11.816

None of the listed regenerants reached Lake Michigan as an uncontrolled spill (although the major portion of the tank contents was released to the Lake through outfalls OOF/001 as a normal release in conformance with the requirements of NPDES Permit MI0001457 and Plant procedures). There were no personal injuries associated with this loss and no property damage.

The caustic loss included 225 gal of 20% caustic from the time of discovery until contents were diluted with water (45 min x 5 gal/min) plus 900 gallons of 0.1 normal caustic solution from time of dilution until pH dropped to 12.2 plus 250 gallons 0.01 normal caustic solution until pH reached 1.7 at 1750 hours. An additional amount of 500 gallons was lost during draining of the tank for a total volume lost of 1875 gallons. About 50% of the lost caustic was pumped back into the

participating in an effort to effect changes to the physical tank and the systems, and maintaining the system to prevent or minimize future spill events. Until all aspects of the operation are scrutinized, it is impossible to predict what changes will be made; however, results from this effort should be available later this year.

VI. Cleanup

An evaluation is being performed at the present time to ascertain the type and extent of cleanup required following a loss of this nature. Any cleanup action should be started the week of May 6, 1985 unless unforeseen factors delay the cleanup.

DHAndrews/5-3-85

chemical sump from the ground although no credit is assumed for this amount. The total amount of caustic lost is 413 pounds as follows:
 $(225 \text{ gal} \times 3.785 \text{ l/gal} \times 200\text{g/l NaOH} \times 1\text{b}/454\text{g}) + (900 \text{ gal} \times 3.785 \text{ l/gal} \times 4\text{g/l NaOH} \times 1\text{b}/454\text{g}) + (250 \text{ gal} \times 3.785 \text{ l/gal} \times .4\text{g/l NaOH} \times 1\text{b}/454\text{g})$
 $= 413 \text{ lbNaOH}$

No injuries occurred as a result of this loss and none of the lost material reached Lake Michigan.

III. Cause of Loss

The normal regeneration of the Plant makeup demineralizers results in the accumulation of about 38,000 gallons of regenerants (pH 2) in tank T921. Any flaw in the internal coating of the tank allows this corrosive liquid to contact the carbon steel shell resulting in eventual through wall failure of the tank. Because of the heat tracing and insulation on the tank, it is possible to not notice small leaks. The current leak started with pH 2 water sitting in the tank for over 24 hours before initiation of a leak sufficiently large enough to escape from the insulation jacket.

The caustic loss had an additional failure associated with it in that the level indication on the T907 caustic storage tank is currently inoperable; consequently, the operator did not know until the tank overflowed that it was full. Additionally, there are no instructions to operating personnel to isolate feedwater purity building sump pumps from the neutralizer tank during a leak event; consequently, the contents of the chemical sump were pumped (automatically) from an environmentally-safe location to an environmentally-unsafe location (T921) where upon the leak from the tank was reinitiated.

IV. Plant Responses to the Spill

Upon discovery, the shift supervisor invoked the Palisades SPOC/PIP and notified the Duty On-Call Superintendent and then the Lab Supervisor-Environmental was contacted. Proper immediate actions to eliminate the leak by emptying the tank were taken while insuring that the quality of the Plant effluent was not adversely affected to mitigate the leak.

Plant Operating and Chemistry personnel took the necessary steps to reduce the consequences of the leak by adding lime for the acid spill and pumping as much as possible of the caustic back to the chemical sump. All of these actions were performed within the personal protective constraints of the Consumers Power Accident Protection Manual insuring that no injuries would be received as a result.

V. Actions Being Undertaken to Prevent or Minimize Future Potential for Spill

For the short term, all lines leading to the neutralizer tank have been caution tagged to prevent reoccurrence of the leak. Maintenance Orders have been written to inspect the tank for leaks and repair the leaks as found. Operations, Chemistry and Engineering personnel will be



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NUCLEAR LICENSING

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

April 17, 1985

M905

Mr Galen Kilmer
Groundwater Quality Division
Michigan Department of Natural Resources
621 Tenth Street
PO Box 355
Plainwell, MI 49080

REPORT OF OIL, SALT OR POLLUTING MATERIAL LOSS -
SULFURIC ACID LOSS, PALISADES PLANT, COVERT, MICHIGAN

Enclosed is a Report of Oil, Salt or Polluting Material Losses, Form R4616, applicable to a recent sulfuric acid loss at the Company's Palisades Plant near Covert, Michigan. This loss was discovered at 5:10 AM on April 10, 1985 and reported to the Plainwell District MDNR at 10:30 AM on April 10, 1985.

Should you require any additional information regarding this matter, please contact this office.

R L Fobes

R L Fobes
Senior Environmental Advisor

BCC BWMarguglio, JSC-220A
ATUdrys, M-1023
DHAndrews, Palisades
JRSchepers, Palisades
JFFirlit, Palisades
BDJohnson, P-24-606

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
REPORT OF OIL, SALT OR POLLUTING MATERIAL LOSSES

Pursuant to the provisions of Act 245 of the Public Acts of Michigan 1929 as amended, regulations have been issued which require that all owners, managers or operators of vessels, oil storage or on land facilities shall notify the Water Resources Commission or his authorized representative of oil, salt and polluting material losses. This notification shall be made promptly by telephone or telegraph, giving briefly the particulars, and by mail, giving a detailed account of events and conditions.

Date April 15, 1985		Company Name Consumers Power Company	
Location of Loss (Be Specific) CP Co - Palisades Nuclear Plant, 277780 Blue Star Memorial Highway, Covert, MI 49043			
"A" Cooling Tower Acid Trench (SW Corner of "A" Cooling Tower)			
Material Lost 93% Sulfuric Acid	Amount 332 Gallon	Name of Surface Water Involved N/A	
Date Loss was Discovered April 10, 1985		Time of Discovery 0510 Hours	
Name of Department of Natural Resources Representative Contacted Rich Sadowski-Plainwell			
Telephoned or Telegraphed by Whom David H Andrews			Time 1030 Hours
Cause of Loss (Include Type of Equipment and Other Details) At 1840 Hrs on April 9, 1985, the "A" cooling tower acid pump was returned to service following repairs. At 0510 hours on April 10, 1985, it was discovered that a flange in the acid feed line to the tower had separated due to failure of the bolts. The acid pump was immediately shut off and the leaking flange repaired.			
Nature of Loss (Include Complete Description of Damage) The majority of the acid was contained in the concrete trench for the acid feed line. The remainder was contained in the sand at the spill location.			
Additional Comments (Include Method of Control, Plans for Prevention of Recurrence, etc) The acid was neutralized in place by the addition of lime. Lime was added to the puddles of acid and general area where the acid spilled onto the ground. Additional lime will be added to yield a neutral pH throughout the area. To prevent recurrence, acid resistant bolts will be installed at the flange.			
Company Name Consumers Power Company		By (Signature) David H Andrews/RLFobes <i>RLF</i>	

24-Hr Emergency Notification Number
(800) 292-4706

Return this form to:

Environmental Department
Parnall Road
Jackson, Michigan



**Consumers
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General Offices: 212 West Michigan Avenue, Jackson, MI 49201 • (517) 788-0550

January 10, 1985

M905

Mr Galen Kilmer
Groundwater Quality Division
Michigan Department of Natural Resources
621 Tenth Street
Plainwell, MI 49080

REPORT OF OIL, SALT OR POLLUTING MATERIAL LOSS -
CAUSTIC LOSS - PALISADES PLANT, COVERT, MICHIGAN

Enclosed is a Report of Oil, Salt or Polluting Material Losses, Form R4616, applicable to a caustic loss at our Palisades Plant located near Covert, Michigan. This loss was discovered at 4:00 PM on October 12, 1984 and reported to the Michigan Water Resources Commission Hotline at 4:30 PM on October 12, 1984.

Should you require any additional information regarding this matter, please contact this office.

Ronald L Fobes

Ronald L Fobes
Senior Environmental Advisor

RLF/fmh

BCC BWMarguglio, JSC-220A
ATUdry, M-1023
JRSchepers, Palisades
DHAndrews, Palisades
BDJohnson, P-24-606

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
REPORT OF OIL, SALT OR POLLUTING MATERIAL LOSSES

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Date 1-10-85		Company Name Consumers Power Company	
Location of Loss (Be Specific) Palisades Plant, Route 2, Box 154, Covert, Michigan 49043			
Material Lost 50% Caustic Soda (NaOH)		Amount 50 gallons	Name of Surface Water Involved NA
Date Loss was Discovered 10/12/84		Time of Discovery 1600	
Name of Department of Natural Resources Representative Contacted FEAS Operator			
Telephoned or Telegraphed by Whom D H Andrews			Time 1630
Cause of Loss (Include Type of Equipment and Other Details) The caustic transfer line to the waste neutralizer tank (T921) separated due to insufficient support.			
Nature of Loss (Include Complete Description of Damage) About 50 gallons of 50% NaOH spilled onto and soaked into the sand underneath the tank.			
Additional Comments (Include Method of Control, Plans for Prevention of Recurrence, etc.) Sequence of events to date: 10/12 - Spill, immediate action & notifications under SECC/PIDP 10/15-19 - Analyze and determine extent of loss 10/31-11/15 - Generate purchase documents for soil removal 12/17 - Remove effected soils and replace with clean material			
Company Name Consumers Power Company			By (Signature) DHAndrews/RLFobes

24-Hr Emergency Notification Number **RLF**
(800) 292-4706

Return this form to:

Environmental Department
Parnall Road
Jackson, Michigan



Consumers
Power
Company

General Offices: 212 West Michigan Avenue, Jackson, MI 49201 • (517) 786-0550

January 15, 1985

M905.1

Mr Galen Kilmer
Michigan Department of Natural Resources
Plainwell District Office
621 N 10th Street
Plainwell, MI 49080

TRANSFORMER MINERAL OIL LEAK AT THE PALISADES PLANT

As we discussed over the telephone on January 9, 1985, the following information is provided relative to the transformer oil leak at the Company's Palisades Nuclear Plant which was verbally reported to you on February 24, 1984. At that time, Mr Roger Whiting of our staff provided you a preliminary description of the leak but no written account of the incident or of the Company's follow-up action was provided.

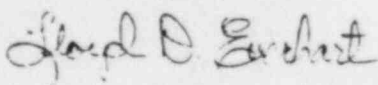
The incident involved the Plant's Station Power Transformer No 1-1 which was known through testing to contain PCB-contaminated (53 ppm) mineral oil dielectric fluid. The leak was first detected in late November, 1983 by a maintenance engineer; he subsequently (February 21, 1984) contacted the Plant's senior chemist who appraised him of the unit's low-level PCB contamination and brought the leak to the attention of the Company's Environmental Department. The leak originated from a defective bushing near the top of the transformer which allowed a small quantity (<1 pint/day) of mineral oil to seep down and drip into the catch basin/sump system beneath the unit. There was concern that although the leaked mineral oil had been initially contained in the catchment system, some of the oil might have been inadvertently discharged to the surrounding soil and to a storm drain during "as needed" pumping of the sump. To confirm possible contamination, samples for PCB analysis were taken from (1) the soil/rocks that were part of the catch basin around and under the transformer, (2) from soil near the sump and storm drain, (3) from absorbent pads placed in the sump, and (4) from subsurface water in the sump. In addition, (5) mineral oil from the transformer was retested to confirm its PCB concentration. PCB concentrations found in the five categories of samples (in the order stated above) were: (1) 0.2 - 16.8 ppm; (2) <0.1 - 1.3 ppm; (3) 12.9 - 61.4 ppm; (4) <1 ppm; and (5) 65.7 ppm. Based on analysis of these results, it was concluded that the PCB contamination of concern was restricted to the soil/rocks around and under the transformer and to the absorbent pads in the sump. Cleanup activities were therefore focused on these areas.

Following repair of the transformer and retrofilling with non-PCB oil in early April 1984, cleanup and repair of the transformer catch basin and sump was performed. This operation resulted in the removal and replacement of approximately 30 cubic yards of soil/rocks from the area near the transformer and the disposal of the absorbent pads which had been periodically replaced in the sump while awaiting repair of the transformer. The operation was concluded by testing a final water sample from the sump (it tested <1 ppm PCB) and pumping the sump water into the storm drain.

As discussed with you, because there was no loss of PCBs to the environment (it was retained in the transformer catch basin/sump system and ultimately properly disposed), no formal report of this loss will be made to the DNR.

Should you require more information or have any questions about this matter, feel free to contact me at 517-788-2475.

Sincerely,



Lloyd D Everhart
Senior Aquatic Biologist

LDE/fmh

CC BWMarguglio, JSC-220A
PCHittle, JSC-202A
DAndrews, Palisades
HJDelinck, JSC-207