CENTERIOR ENERGY
Power Generation Group

Perry Nuclear Power Plant
10 Center Road
Perry, Ohio 44081

Mail Address:
P.O. Box 97
Perry, OH 44081

216-259-3737
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July 14, 1997
PY-CEI/OEPA-0271L

Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, Ohio 44087

Subject:
Perry Nuclear Power Plant
NPDES Permit No. 3IB00016*ED

Ladies and Gentlemen:

Essential maintenance is planned to be performed on the Perry Nuclear Power Plant (PNPP) circulating water system during a refueling outage scheduled to begin in September, 1997. The maintenance will require the addition of Betz FerroQuest LP7202, a calcium carbonate scale remover. Product information is attached. In addition to the Betz product, sulfuric acid will be used to lower pH. This circulating water system cleaning evolution is expected to last about 48 hours. During chemical addition PNPP will monitor pH hourly. This frequency will be reduced to every 4 hours during the duration of the treatment.

Upon completion of the treatment, the treated water will be mixed with service water and discharged via the plant discharge, 3IB00016004, with make up water being supplied by the plant service water system until the concentration in the circulating water is reduced to 75 ppm of FerroQuest LP7202. During the discharge evolution, the maximum concentration of FerroQuest LP7202 and sulfuric acid will be 300 ppm and .2 mg/L respectively at this outfall. Discharge information is attached per Ohio Environmental Protection Agency (OEPA) guidelines for non-contact cooling water system additives.

Following treatment, the system is to be drained for other maintenance activities. To expedite drainage, PNPP is requesting approval to pump some of the 7 million gallons of circulating system water via storm drains to a stream impoundment on the east side of the plant. It is PNPP's intention to meet the same sampling requirements for bypassing to the storm drains as those at the normal plant discharge. A skimmer plate and impoundment dam are in place downstream of the point where plant site drainage enters the stream and prior to entry into Lake Erie. Based on the pump rating,this activity should take five days or less. No solids or sludges will be pumped during the system draining. These will be manually removed.

In the past, leaks from expansion joints and small cracks in the cooling tower basin wall and return piping have resulted in OEPA notification. The concrete will complete another thermal cycle by the end of summer at which time small leaks may occur. All required regulatory actions will be adhered to if leakage occurs.

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Since planning for the September outage is already underway, and this is a key step in the maintenance schedule, a response is requested at your earliest convenience.

If you have questions or require additional information, please contact Ms. Donna Tizzano at (216) 280-5514.

Very truly yours,

R. Kundalkar for L. W. Myers

DGT:sc

Attachments

cc: NRC Region III
NRC Resident Inspector
NRC Project Manager
NRC Document Control Desk (Docket No. 50-440)

PRODUCT INFORMATION FOR the Ohio EPA

For: **CEI-Perry Nuclear Power Plant - Circulating Water System**
Submitted By: **Betz Water Management Group**

1. Additive Name - FerroQuest LP7202

Manufacturer Information:

Betz Water Management Group
One Quality Way
Trevose, PA 19053
Phone: 215-355-3300
Fax: 215-953-5501

a. MSDS attached
b. & c. Trade Secret Ingredient (E195)
Trade Secret Ingredient (122)
Additional information can be obtained through Ray Post, Product Manager (215)674-9200x532 on an as needed basis.

d. The product, FerroQuest LP7202 is a calcium carbonate remover.

2. The concentration of the additive to be used is 1100 mg/L.

a. The addition frequency will be on an "As needed" basis. Typically less than 1 time per year.
b. The treatment application will last a maximum of 72 hours.
c. The product is gravity fed based on theoretical calculations.

3. Discharge levels of 300 ppm product are approximately 33.3% of the 48 hrs. LC50 for the most sensitive organism Daphnia magna. The discharge of the FerroQuest from the circulating water system could be easily met by diluting the blowdown of the circulating water system of 20,000 gpm with 55,000 gpm from the service water system.

a. The average discharge from the cooling tower = 10,000 gpm which is combined with the average plant discharge of 55,000 gpm.
b. Detoxification is not required.

4. The average flow rate at the outfall is 93.60 MGD at the main plant outfall. A maximum flow rate at the outfall is of 108 MGD. Should the flow rate reach the maximum of 108 MGD, greater dilution of the FerroQuest LP7202 would be achieved.

5. Lake Erie receives the discharge from the plant.

6. Toxicity and environmental information.
a. 48-hour LC 50 and 96-hour LC 50 for the additive is attached.

BetzDearborn

Interoffice

To: R. Post

cc P. Friend
L. Lyons
C. Falco

Date: March 6, 1997

From: K. Gibson

Subject: FerroQuest LP7202 Study Results

Below are the results of 4 studies conducted on FerroQuest LP7202 using Fathead Minnow and Daphnia magna as the test species. Two screen studies were conducted without pH adjustments. Initial pH and dissolved oxygen readings are given. Please note that after the 48 hour exposure, pH and dissolved oxygen levels remained constant, neither rising or falling.

NON-ADJUSTED SCREENS:

Species	Concentration (mg/l)	Cumulative % Mortality 48 hrs.	Initial pH	Initial D.O.
Fathead Minnow	Control	0	7.4	8.7
	1	0	7.3	8.7
	10	0	7.2	8.7
	50	0	6.2	8.6
	100	0	5.2	8.6
Daphnia magna	Control	0	7.4	8.7
	1	0	7.3	8.7
	10	0	7.2	8.7
	50	0	6.2	8.6
	100	100	5.2	8.6

Data to be reported is as follows:
Fathead minnow 48 hour static screen - 0% Mortality at 100 mg/l
Daphnia magna 48 hour static screen - - 0% Mortality at 50 mg/l; 100% Mortality at 100 mg/l.

Two definitive studies (LC50) were also conducted. The test solutions in the definitive studies were pH adjusted with powdered CACO3 to levels between 6 and 7. This method of adjustment was thought to best mimic the process involved in the use of FerroQuest LP7202 . Please note, test solutions in these studies were aerated for the duration of the exposure to prevent degradation and dissolved oxygen depression at the higher test concentrations.

Species	Concentration (mg/l)	% Mortality 48 hrs	Initial pH / Adj. level	Final pH	Initial Dissolved Oxygen	Final Dissolved Oxygen
Daphnia magna						
	Control	0	7.5	7.6	8.7	8.6
	500	0	4.8 / 6.6	8.0	8.5	8.7
	1000	10	4.7 / 6.5	8.0	8.5	8.7
	2000	0	4.4 / 6.4	8.0	8.5	8.8
	3000	10	4.0 / 6.2	7.6	8.5	8.6
	4000	75	3.9 / 6.2	7.8	8.3	8.7
	5000	100	3.2 / 6.1	7.6	8.1	8.7

Species	Concentration (mg/l)	% Mortality 96 hrs	Initial pH / Adj. level	Final pH	Initial Dissolved Oxygen	Final Dissolved Oxygen
Fathead minnow						
	Control	5	7.5	7.6	8.7	8.3
	500	5	4.8 / 6.6	8.0	8.5	8.7
	1000	20	4.7 / 6.5	7.6	8.5	8.3
	2000	60	4.4 / 6.4	7.7	8.5	8.2
	3000	100	4.0 / 6.2	7.4	8.5	7.4
	4000	100	3.9 / 6.2	7.8	8.3	8.8
	5000	100	3.2 / 6.1	7.6	8.1	8.9

Data to be reported as follows:
Daphnia magna 48 hour acute static bioassay with pH adjust. - NOEL = 500 mg/l; LC50 = 3350 mg/l.
Fathead minnow 96 hour acute static bioassay with pH adjust. - NOEL = 500 mg/l; LC50 = 1440 mg/l.

If you have any questions about these studies, please contact me or Larry Lyons.

BETZDEARBORN MATERIAL
SAFETY DATA SHEET

EFFECTIVE DATE: 28-FEB-1997
PRINTED DATE: 08-APR-1997

BetzDearborn

1) CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : FERROQUEST LP7202

PRODUCT APPLICATION AREA: CHEMICAL CLEANING COMPOUND.

COMPANY ADDRESS:
BetzDearborn Inc., Water Management Group
200 Witmer Road , Horsham , PA 19044
Information phone number: 215 773-6269

EMERGENCY TELEPHONE (HEALTH/ACCIDENT): (800)-877-1940 (USA)

2) COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
	TRADE SECRET INGREDIENT(B195);TSRI 125438 - 5118P Irritant (eyes)
	TRADE SECRET INGREDIENT(122);;TSRI 125438 - 5214P Potential irritant (eyes)
	TRADE SECRET INGREDIENT(222);TSRI 125438 - 5238P Oxidizer; corrosive; pulmonary damage; dental erosion

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

CONTINUED

3) HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

DANGER

May cause slight irritation to the skin. Corrosive to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard: Corrosive to steel
Emergency Response Guide #154
Odor: Acid; Appearance: Yellow To Amber, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

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POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure: May cause slight irritation to the skin.

ACUTE EYE EFFECTS:
Corrosive to the eyes.

ACUTE RESPIRATORY EFFECTS:
Primary route of exposure;Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:
May cause severe irritation or burning of the gastrointestinal tract.

TARGET ORGANS:
Prolonged or repeated exposures may cause toxicity to the lung.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin.

CONTINUED

4) FIRST AID MEASURES

SKIN CONTACT:
Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.
EYE CONTACT:
Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.
INHALATION:
Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.
INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

5) FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
EXTINGUISHING MEDIA:
dry chemical, carbon dioxide, foam or water
HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
FLASH POINT:
> 200F P-M(CC)
MISCELLANEOUS:
Corrosive to steel
UN3264;Emergency Response Guide #154

6) ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.
DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

CONTINUED

7) HANDLING AND STORAGE

HANDLING:
Contains an oxidizer. Avoid all contact with reducing agents, oils, greases, organics and acids. Corrosive to metal.

STORAGE:
Keep containers closed when not in use. Use approved containers only. Store in cool, well-vented area. Contact with metals may release flammable hydrogen gas.

8) EXPOSURE CONTROLS/PERSONAL PROTECTION

CHEMICAL NAME — **EXPOSURE LIMITS**

TRADE SECRET INGREDIENT(E195);TSRN 125438 - 5118P
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

TRADE SECRET INGREDIENT(122);;TSRN 125438 - 5214P
PEL (OSHA): NUISANCE DUST
TLV (ACGIH): 5 MG/M3
MISC: Note: manufacturer's recommended exposure limit: 10 mg/m3.

TRADE SECRET INGREDIENT(222);TSRN 125438 - 5238P
PEL (OSHA): 5 MG/M3(10MG/M3-STEL)
TLV (ACGIH): 5 MG/M3(10MG/M3-STEL)

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
An air-supplying respirator (positive pressure full facepiece) may be needed for this product.

SKIN PROTECTION:
neoprene gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles

CONTINUED

9) PHYSICAL AND CHEMICAL PROPERTIES

Specific Grav. (70F)	1.143	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	26.00	Vapor Density (air=1)	< 1.00
Viscosity (cps 70F)	ND	% Solubility (water)	100.0

Odor	Acid
Appearance	Yellow To Amber
Physical State	Liquid
Flash Point (F)	> 200 P-M(CC)
pH As Is (approx.)	< 1.0
Evaporation Rate (Ether=1)	< 1.00

NA = not applicable ND = not determined

10) STABILITY AND REACTIVITY

STABILITY:
Stable under normal storage conditions.
HAZARDOUS POLYMERIZATION:
Will not occur.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
BETZ INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"B"

11) TOXICOLOGICAL INFORMATION

Oral LD50 RAT:	>5,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>5,000 mg/kg
NOTE - Estimated value	
Ames Assay :	Negtive
Non-Ames Mutagenicity :	Pos/Neg

CONTINUED

12) ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Rainbow Trout 96 Hour Static Acute Bioassay

LC50: 240 mg/L

Daphnia magna 48 Hour Static Acute Bioassay

LC50: 1000 mg/L

Bluegill Sunfish 96 Hour Static Acute Bioassay

LC50: 340 mg/L

BIODEGRADATION

COD (mg/gm): 597
TOC (mg/gm): 272
BOD-5 (mg/gm): 520
BOD-28 (mg/gm): 686

13) DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH, steel).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14) TRANSPORT INFORMATION

DOT HAZARD: Corrosive to steel
JN / NA NUMBER: UN3264
DOT EMERGENCY RESPONSE GUIDE #: 154

CONTINUED

15) REGULATORY INFORMATION

TSCA:
All components of this product are listed in the TSCA inventory.
CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
6,109 gallons due to (122);10,507 gallons due to (222);
SARA SECTION 312 HAZARD CLASS:
Immediate(acute);Delayed(Chronic)
SARA SECTION 302 CHEMICALS:

CAS#	CHEMICAL NAME
	TRADE SECRET(222)--INORGANIC ACID

SARA SECTION 313 CHEMICALS:

CAS#	CHEMICAL NAME	RANGE
	TRADE SECRET(222)--INORGANIC ACID	0.1-1.0%

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16) OTHER INFORMATION

NFPA/HMIS	CODE	TRANSLATION
Health	3	Serious Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	CORR	No translation
(1) Protective Equipment	B	Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	11-FEB-1997		** NEW **
	25-FEB-1997	12	11-FEB-1997
	28-FEB-1997	16	25-FEB-1997