CENTERIOR ENERGY

PERRY NUCLEAR POWER PLANT
10 CENTER ROAD
PERRY, OHIO 44081
(216) 259-3737

Mail Address:
P.O. BOX 97
PERRY, OHIO 44081

Robert A. Stratman
VICE PRESIDENT - NUCLEAR

April 22, 1994
PY-CEI/OEPA-0200L

Ms. Kim Jackson
Ohio Environmental Protection Agency
Division of Water Pollution Control
Enforcement and Compliance Section
1800 Watermark Drive, P.O. Box 1049
Columbus, Ohio 43266-0149

Dear Ms. Jackson,

The Perry Nuclear Power Plant has enlisted Calgon Corporation to initiate the use of Towerbrom 960 for slime and algae control in the plant Circulating Water System. The chemical will be added to the system twice per day.

Attachments 1 and 2 contain the information required in accordance with Ohio EPA procedures. Our intention is to begin use of Towerbrom 960 upon receipt of your approval. Please contact Donna Tizzano at (216) 280-5514 if you have further questions.

Sincerely,

Robert A. Stratman

RAS:dgt

cc: NRC Document Control Desk
NRC PRoject Manager
NRC Resident Inspector
NRC Region III
B. Hall - OEPA District Office

260073

Operating Companies
Cleveland Electric Illuminating
Toledo Edison

C001
1/1

Cooling Water Additive Information

1. The name of the additive to be used and general product information.

   a. MSDS - Attachment 2
   b. 89% Sodium Dichloro-S-Triazinetrione
      11% Sodium Bromide
   c. <5% Water
      <3% Sodium Chloride
   d. slime control in the plant circulating water system
   e. USEPA Registration Number 524-395-10445

2. The concentration of the additive to be used (mg/L)

   a. Application 0.2 - 0.5 mg/L, two times per day.
   b. Shock feed for testing
   c. Manual addition for testing purposes. A permanent feed system will be employed if permanent use of Towerbrom 960 is employed.

3. The expected concentration of the additive contained in the discharge immediatly prior to entering state surface waters.

   a. 0.0 mg/L
   b. Dehalogenation will be accomplished by addition of sodium sulfite to the plant outfall by the existing Plant Discharge Dechlorination System.

4. The average flowrate (MGD) and the outfall number of each outfall containing the additive.

   a. The average flow rate in the Perry Plant outfall is 82.08 MGD*. The volume of cooling tower blowdown entering the discharge is approximately 14.4 MGD. The outfall is No. 3IB00016004.

5. Name of the state surface water(s) that receive the discharge.

   Lake Erie

6. Toxicity and environmental information for the additive.

   96 hour LC50 - Rainbow Trout - .37 mg/L
   96 hour LC50 - Bluegill Sunfish - .43 mg/L
   48 hour LC50 - Daphnia Magna - 2.30 mg/L
   48 hour LC50 - Fathead Minnow - .70 mg/L

* MGD = Million Gallons per Day

Attachment 2

MATERIAL SAFETY DATA SHEET

CALGON CORPORATION
P.O. Box 1346
Pittsburgh, PA 15230-1346

24 Hour Emergency Telephone - - (412) 777-8000

I. PRODUCT IDENTIFICATION

PRODUCT NAME: Towerbrom 960

CHEMICAL DESCRIPTION: This product is a mixture of sodium dichloroisocyanurate (anhydrous) and sodium bromide. When dissolved in water, the mixture produces the disinfectant hypobromous acid.

PRODUCT CLASS: Microbiocide

II. HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

Chemical Name	CAS No.	% by Weight	Oral LD50 (rat)	Dermal LD50 (rabbit)	ACGIH TLV OSHA PEL
Sodium dichloro-s-triazinetrione	2893-78-9	89	1400 mg/kg	Not available	TWA 0.5 mg/m^3* STEL 1.5 mg/m^3*
Sodium bromide	7647-15-6	7	3500 mg/kg	Not available	Not listed

*Supplier recommendations

III. TYPICAL PHYSICAL PROPERTIES

BOILING POINT: Not applicable

VAPOR PRESSURE: Not available

VAPOR DENSITY (air=1): Not available

% VOLATILE BY WEIGHT: Nil

SOLUBILITY IN WATER: 20 g/100 g @ 25°C

BULK DENSITY: 57 lbs./cubic ft.

pH: 6.0 (1% soln @ 25°C)

MELTING POINT: 240-250°C (decomposes)

APPEARANCE AND ODOR: White to off-white granules with slight bromine odor.

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: This product is not flammable or combustible, however, it is an oxidizing and chlorinating agent. Contact with most foreign materials, organic matter or easily chlorinated or oxidized materials may result in fire.

IV. FIRE AND EXPLOSION HAZARD DATA (continued)

EXTINGUISHING MEDIA: Use water spray to cool containers exposed to fire and massive quantities of water to dilute material involved in a fire or spilled from containers. Do not use ABC dry chemical fire extinguishers, other dry chemical fire extinguishers or materials or Halon fire extinguishers.

SPECIAL FIREFIGHTING PROCEDURES: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential. Chlorine containing gases with traces of phosgene can be liberated at temperatures in excess of 400°F. Thoroughly decontaminate equipment including wearing apparel worn by fire fighters or others following the incident.

UNUSUAL FIRE AND EXPLOSION HAZARDS: In a fire, as a result of decomposition or contact with small amounts of water, extremely dense and noxious fumes containing chlorine and other toxic gases will be evolved. Contact with ammonia, ammonium salts, urea or similar compounds which contain nitrogen may form nitrogen trichloride, a highly explosive compound. Mixture with hydrated salts may result in an exothermic reaction, decomposition and container rupture due to pressure. Mixture with non-ionic surface-active agents may result in highly exothermic reactions causing fire or explosion. Decomposition can be initiated with a heat source and can propagate throughout the mass with the evolution of dense fumes. Drums may rupture if the contents are exposed to heat or become contaminated or wet.

NFPA RATINGS: Health = 3 Flammability = 0 Reactivity = 2 Special Hazard = OXY

V. REACTIVITY DATA

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Overheating

INCOMPATIBILITY: Avoid contact with water while in the container. Avoid contact with easily oxidizable organic material; ammonia, urea, or similar nitrogen containing compounds; inorganic reducing compounds; calcium hypochlorite; alkalis.

HAZARDOUS DECOMPOSITION PRODUCTS: Chlorine (released in presence of moisture) and other chlorine containing compounds. Hypobromous acid, hypochlorous acid, and cyanuric acid (released when dissolved in water). Oxides of nitrogen, disodium oxide, bromine, and traces of phosgene.

VI. HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Eye and skin contact, inhalation, ingestion

TARGET ORGANS: Eye, skin, respiratory tract, gastrointestinal tract

DANGER!
May cause severe eye and skin damage.
May be harmful if swallowed.
May cause respiratory tract irritation.
Contact with water slowly liberates irritating and hazardous chlorine containing gases.
Decomposes at 460-480°F with release of harmful gases.

VI. HEALTH HAZARD DATA (continued)

EFFECTS OF OVEREXPOSURE:

ACUTE

EYE CONTACT: This product may produce severe eye damage upon contact with the eye.

SKIN CONTACT: This product may be irritating and damaging to the skin upon contact. In dry form, the product is not appreciably irritating to dry skin. However, on contact with moisture, sodium dichloroisocyanurate readily hydrolyzes to form hypochlorous acid which may cause tissue damage. This product is not expected to be absorbed through the skin in harmful amounts or to cause skin sensitization. The acute dermal LD50 (rabbit) of a similar product was found to be > 5000 mg/kg.

INGESTION: The acute oral LD50 (rat) of a similar formulation was found to be 1350 mg/kg. Ingestion of sodium dichloroisocyanurate has been reported to cause ulceration or bleeding from the stomach, gastrointestinal irritation, salivation, tearing, shortness of breath, weakness, emaciation, lethargy, diarrhea, and coma.

INHALATION: Inhalation of sodium dichloroisocyanurate dust has been reported to produce nose, throat, and respiratory tract irritation and in some individuals bronchospasm may result. Chlorine gas from decomposition of the product has been reported to cause burning of the nose and mouth and irritation of the lining of the respiratory tract with coughing, a choking sensation, chest pain, vomiting, nausea, headache, dizziness and fainting. The onset of severe respiratory symptoms following exposure to chlorine, including pulmonary edema and pneumonitis, may be delayed.

SUBCHRONIC, CHRONIC

Rats were exposed by inhalation to dust of sodium dichloroisocyanurate at exposure levels of 0, 3.2, 10.4, and 32.8 mg/m3 for 6 hours/day, 5 days/week for 4 weeks. Signs of irritation including lacrimation, salivation and labored breathing were observed at the mid- and high-exposure levels. Decreased body and/or liver weights, and hematological parameter alterations were also noted in the mid- and high-exposure groups. No adverse histopathological effects were observed. The no-effect level is considered to be 3.2 mg/m3.

No teratogenic or fetotoxic effects were observed in the offspring of mice administered sodium dichloroisocyanurate, by gavage, at dosage levels of 0, 25, 100, and 400 mg/kg/day on days 6 through 15 of gestation. Mortality and signs of toxicity were observed in the high-dose group dams. Decreased maternal body weight gain was observed in all treatment groups.

Repeated oral ingestion of sodium bromide produces sedation and central nervous system (CNS) depression with possible effects such as headache, irritability, agitation, delirium, vertigo, memory loss, muscular incoordination and increased action of the reflexes, decreased appetite, hallucinations, acne-like rash, stupor and coma.

Following repeated exposures (4-12 weeks) to sodium bromide in their feed, signs of muscular incoordination and depressed grooming, changes in body weight and behavior, and endocrine (hormone) system effects were reported in laboratory animals. Reduced fertility and viability of offspring were noted in rats fed sodium bromide for three successive generations. These effects on the ability of rats to reproduce were reported to be reversible upon withdrawal of the bromide. Results of another study suggest that learning ability was reduced in offspring of rats given sodium bromide during pregnancy.

CARCINOGENICITY:

NTP: No ingredients listed
IARC: No ingredients listed
OSHA: No ingredients listed

HMIS RATINGS: Health = 3* Flammability = 0 Reactivity = 2
Personal Protective Equipment = to be supplied by user depending on use conditions.

*There are potential chronic health effects to consider.

VII. APPLICABLE CONTROL MEASURES

APPROPRIATE HYGIENIC PRACTICES: Do not get in eyes, on skin, or on clothing.
Avoid breathing dust or vapor.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves, face shield and protective clothing

RESPIRATORY PROTECTION: If airborne concentrations exceed recommended exposure limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area.

HANDLING AND STORAGE PRECAUTIONS: It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Use with adequate ventilation.
Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion.
Keep from contact with clothing or other combustible materials.
Remove and wash contaminated clothing promptly.
Store in a cool, dry, well-ventilated place away from flammable liquids, combustible materials, and oxidizable materials.
Drums should be palletized to prevent wetting from floor washings or drainage.
Avoid prolonged storage in unventilated areas at summer temperatures.
Wash thoroughly after handling.
Keep container closed when not in use.

ENGINEERING CONTROLS: Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits. Use local mechanical exhaust ventilation at sources of air contamination. Consult NFPA Standard 91 for design of exhaust systems.

VIII. FIRST AID

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical aid immediately.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical aid immediately. Wash clothing before reuse.

INGESTION: If swallowed, do NOT induce vomiting. Give large quantities of water. Seek medical aid immediately. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical aid.

IX. SPILL OR LEAK PROCEDURES/WASTE DISPOSAL

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled material. Any spillage of this product should be cleaned up immediately to avoid contact with other materials with which it may react. Keep spilled product dry. Contact with water releases irritating and hazardous chlorine containing gases. Sweep, scoop, or vacuum up all spilled material, contaminated soil, and other contaminated material and place in a clean, dry container for disposal. Complete cleanup on a dry basis if possible. Floor sweeping compounds should not be used in the removal as fuming, fire and explosion may result. Keep unneutralized product out of sewers, watersheds and water systems.

WASTE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional office for guidance.

ECOLOGICAL DATA:

On similar formulation:

Selenastrum	EC50	0.6 mg/l
Daphnia magna	48-hr. LC50	2.5 mg/l
Fathead Minnow	48-hr. LC50	0.7 mg/l

On Sodium dichloroisocyanurate:

Rainbow Trout	96-hr. LC50	0.37 ppm
Bluegill Sunfish	96-hr. LC50	0.43 ppm
Mallard Duck	Oral LD50	1916 mg/kg
Mallard Duck	Dietary 8-day LC50	> 10,000 ppm
Bobwhite Quail	Dietary 8-day LC50	> 10,000 ppm

X. REGULATORY STATUS

TSCA STATUS: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

RCRA STATUS: This product as sold would be considered a RCRA Hazardous Waste based on the characteristics of ignitability and reactivity. The EPA Hazardous Waste Numbers are D001 and D003.

CERCLA reportable quantity of EPA hazardous substances in product: None

SARA TITLE III:

Section 302 Extremely Hazardous Substances: None

Section 311 and 312 Health and Physical Hazards:

Immediate	Delayed	Fire	Pressure	Reactivity
[yes]	[yes]	[yes]	[no]	[yes]

Section 313 Toxic Chemicals: None

DOT CLASSIFICATION:

Class: 5.1
Proper Shipping Name: Dichloroisocyanuric acid salts, mixture
ID Number: UN 2465
Label: Oxidizer
Packing Group: II

PREPARED BY: P.J. Maloney

IMP-0879/AN