

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

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 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylvania      05000388  
 AUTH. NAME      AUTHOR AFFILIATION  
 FIELDS, J.S.      Pennsylvania Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION  
 LEHMAN, S.J.      Pennsylvania, Commonwealth of

SUBJECT: Informs of plan to test & evaluate use of hydrogen peroxide  
 in liquid radwaste sys for removal of organics. No NPDES  
 permit noncompliances expected if discharge into Cooling  
 Tower Blowdown necessary.

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## Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101-1179 • 215/774-5151

July 7, 1992

Mr. Stanley J. Lehman  
Water Quality Specialist Supervisor  
Bureau of Water Quality  
Pennsylvania Department of Environmental Resources  
90 East Union Street, 2nd Floor  
Wilkes-Barre, PA 18701-3296

SUSQUEHANNA STEAM ELECTRIC STATION  
USE OF PEROXIDE IN LIQUID RADIOACTIVE  
WASTE SYSTEM FOR CONTROL OF ORGANICS  
NPDES PERMIT PA 0047325  
CCN 741326 FILE R9-8A  
PLE-15773

Dear Mr. Lehman:

Pennsylvania Power & Light Company (PP&L) is planning on testing and evaluating the use of hydrogen peroxide in the Liquid Radioactive Waste System (LRWS) for the removal of organics. Approximately 1,000 mg/l will be added to the collection tanks upstream of existing treatment to oxidize organics. It is planned that the hydrogen peroxide will be consumed in treatment and there should not be a discharge of this chemical from internal Outfall 171 into Cooling Tower Blowdown Outfall 071. Typically, 85 to 90% of treated liquid radioactive waste is recycled back to the station. If discharge is necessary, the treated water could be discharged between 100 and 200 gallons per minute from LRWS, mixing with at least 5,000 gallons per minute of Cooling Tower blowdown.

Low level organics (>10ppb TOC) impact on system treatment efficiency and purity requirements. By adding hydrogen peroxide, these organics are oxidized and carbon dioxide and water are produced. Hydrogen peroxide in solution dissipates rapidly and is not an environmental concern.

Treatment strategy includes:

- Add up to 1,000 mg/l of hydrogen peroxide to one or all of three 22,000 gallon collection tanks
- Circulate hydrogen peroxide in the collection tanks to oxidize the low level organics
- Process collection tanks through LRWS
- Circulate processed water in sample tanks and determine either recycling or discharge

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July 7, 1992

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CCN 741326 PLE- 15773  
FILE R9-8A  
Mr. Stanley J. Lehman

When there is a discharge into the Cooling Tower Blowdown we do not expect any NPDES permit noncompliances or the presence of hydrogen peroxide. If you have any questions or comments, please call me at (215) 774-7889.

Sincerely,



Jerome S. Fields  
Sr. Environmental Scientist - Nuclear

jsf/ltg2811a(26)

cc: ~~NRC Document Control Room~~  
NRC Region I  
Mr. G. F. Maxwell, Acting NRC Project Director