STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NPDES PERMIT

CT0026298

AES Thames, Inc.
141 Depot Road
Uncasville, CT 06382

Re: DEP/WPC-086-035
Town of Montville
Thames River Watershed

Attention: Daniel J. Rothaupt, President

This permit is issued in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes, and regulations adopted thereunder, as amended and Section 402(b) of the Clean Water Act, as amended, 33 USC 1251, et. seq., and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer a N.P.D.E.S. permit program.

Your application for permit reissuance submitted by Environmental Risk Limited on behalf of AES Thames, Inc., on October 29, 1993, and addenda dated September 8, 1994, March 6, 1995, March 10, 1995, April 7, 1995, April 11, 1995, November 30, 1995, and January 9, 1996, have been reviewed by the Connecticut Department of Environmental Protection.

Your discharge toxicity evaluation (DTE), submitted by New England Bioassay, Inc. on January 2, 1990, has been reviewed by the Connecticut Department of Environmental Protection, has been found to be consistent with Section 22a-430-4(c)(21) of the Regulations of Connecticut State Agencies and is hereby approved in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes.

The Commissioner of Environmental Protection (hereinafter "the Commissioner") has found that the systems installed for the treatment of the non-thermal discharges will protect the waters of the state from pollution. This action is further found to be consistent with the applicable policies of the Connecticut Coastal Management Act Section 22a-92 of the Connecticut General Statutes.

The discharges are subject to the effluent guidelines and standards for the steam electric power generating point source category promulgated on November 19, 1982 pursuant to Section 301 of the Federal Clean Water Act. Specifically discharges are subject to 40 CFR Parts 125 and 423 of the effluent guidelines and standards.

The Commissioner has determined that the thermal component of the Discharge Serial No. 001 will not result in a violation of the Water Quality Standards adopted pursuant to Section 22a-426 of the Connecticut General Statutes as amended and approved by the U.S. Environmental Protection Agency on May 15, 1992.

The Commissioner has determined that the location, design, construction, and capacity of the cooling water intake structure reflects the best technology available for minimizing adverse environmental impact pursuant to Section 316(b) of the Federal Act.

The Commissioner has determined that AES Thames, Inc. is in full compliance with Order Id. WC9062 entered on May 1, 1989. The Commissioner, acting under Section 22a-430, hereby permits AES Thames, Inc. to discharge steam electric power generation wastewaters in accordance with the following conditions:

1. The wastewaters shall be collected, pretreated and discharged in accordance with the above referenced application and all approvals issued by the Commissioner or his authorized agent for the discharges and/or activities authorized by or associated with this permit.

2. The discharges shall not exceed and shall otherwise conform to specific terms and conditions listed below. The discharges shall be monitored and results reported to the Water Management Bureau (Attn: DMR Processing) by the end of the month after the month in which samples are taken according to the following schedule:

A. Monitoring Site No. 01
Monitoring Location: 1
Description: Condenser Cooling Water Intake

Parameter	Units	Minimum Frequency of Sampling	Sample Type
Flow	gpd	Hourly	Instantaneous
Temperature	deg F	Hourly	Instantaneous
Dissolved Copper	ug/l	Quarterly (a)	Daily Composite
Dissolved Lead	ug/l	Quarterly (a)	Daily Composite
Dissolved Nickel	ug/l	Quarterly (a)	Daily Composite
Dissolved Zinc	ug/l	Quarterly (a)	Daily Composite

(a) Concurrent with monitoring of DSN 001 in accordance with paragraph 2.B.(10)(d).

B. Discharge Serial No. 001-1
Monitoring Location: 1
Description: Condenser Cooling Water, Auxillary Non-contact Cooling Water, and Circulating Water Pump Seal Water Discharges (Code 101060z)
Receiving Stream: Thames River (Basin Code 3000)
Present/Future Water Quality Standard: SC/SB
Maximum Daily Flow: 155,555,000 gallons per day

(1) The pH of the discharge shall not be less than 6.0 or greater than 9.0 at any time.

(2) The discharge shall not contain or cause in the receiving stream a visible oil sheen or floating solids.

(3) The discharge shall not cause visible discoloration or foaming in the receiving waters beyond the double boom system installed at the coal unloading dock.

(4) The discharge and operation of all facilities shall not alter significantly the color, turbidity, odor or levels of coliform bacteria from ambient levels in the receiving waters; nor shall the level of dissolved oxygen in the receiving waters fall below 5.0 mg/l as a result of such discharge.

(5) The temperature of the discharge shall not increase the temperature of the receiving stream above 85°F or raise the normal temperature of the receiving stream more than 4°F beyond any zone of influence as provided in the "Connecticut Water Quality Standards & Criteria" as amended.

(6) The maximum temperature of the discharge shall be 80°F December 1 through April 30; 90°F May 1 through June 30; 95°F July 1 through September 30; and 90°F October 1 through November 30.

(7) The maximum temperature increase at the discharge outlet above the intake water temperature shall be 20°F July 1 thru October 31 and 24°F November 1 thru June 30, except during periods of condenser maintenance when the temperature differential may be 40°F. In the event the temperature differential exceeds 40°F for a period exceeding 24 hours, the Department of Environmental Protection shall be notified and a written report of the incident filed.

(8) The thermal plume allowed within the permissible mixing zone as defined by these conditions shall not block zones of fish passage.

(9) Total residual oxidant, defined as the arithmetic sum of total residual chlorine and bromine, shall not be discharged for a period of more than two hours per day. Total residual oxidant shall not exceed 0.2 mg/l at any one time as measured on a grab sample.

(10) The discharge shall contain no other chemical constituents in concentrations which are harmful to human, animal or aquatic life, or which make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the water for other uses.

Parameter	Units	Average Monthly Limits	Maximum Daily Limits	Minimum Frequency of Sampling	Sample Type
Aquatic Toxicity, Acute	P/F	See 2.B.(11),(12) below	NOAEL>100%	Semiannual	Daily Composite
Aquatic Toxicity Chronic	P/F	See 2.B.(11),(12) below	NOAEL>100%	Semiannual	Daily Composite

Total Residual Oxidant	mg/l	See (9) above		Weekly	Grab
Temperature	(^{o}F)	See (6) above		See (c) below	
Temperature	(^{o}F)	See (7) Above		Hourly	Instantaneous
Increase				Hourly	Instantaneous
pH	su	See (1) above		Hourly	Instantaneous
Flow	See (2)B. above and note (b) below			Hourly	Instantaneous
Total Copper	ug/l	----	----	Quarterly	Daily Composite
Dissolved Copper	ug/l	----	----	Quarterly	Daily Composite
Total Lead	ug/l	----	----	Quarterly	Daily Composite
Dissolved Lead	ug/l	----	----	Quarterly	Daily Composite
Total Nickel	ug/l	----	----	Quarterly	Daily Composite
Dissolved Nickel	ug/l	----	----	Quarterly	Daily Composite
Total Zinc	ug/l	----	----	Quarterly	Daily Composite
Dissolved Zinc	ug/l	----	----	Quarterly	Daily Composite

(a) Report the following additional data:

1) Daily range of pH
2) Daily range of flow
3) Daily maximum temperature (^{o}F)
4) Daily maximum temperature increase (normal condenser operations)
5) Daily maximum temperature increase (during condenser maintenance)

(b) The permittee shall record the total flow for each day of discharge and report the total flow, number of hours of discharge for each day of sample collection, and the maximum daily flow for each sampling month.

(c) Sampling for total residual oxidant, defined as the arithmetic sum of total residual chlorine and bromine, shall be conducted during periods of condenser oxidation.

(d) Quarterly sampling shall be conducted concurrent with monitoring at Monitoring Site No. 01 in accordance with paragraph 2.A.

(e) The report shall include a detailed explanation of any violations of the limitations specified above.

(11) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit acute or chronic toxicity in the receiving waterbody.

(a) Compliance with this permit condition shall be achieved when there is no significant mortality in a grab sample of the effluent at a concentration equal to or greater than an NOAEL = 100% as determined by the pass/fail methodology in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies.

(b) Monitoring to determine compliance with this limit shall be performed semi-annually (May, November) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA 600/4-90/027F) with the following specifications:

(i) Mysidopsis bahia (1-5 days old with no greater than 24 hours range in age) and Cyprinodon variegatus (1-14 days old with no greater than 24 hours range in age) shall be used as test organisms.

(ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.

(iii) Test duration shall be 48 hours for Mysidopsis bahia and 48 hours for Cyprinodon variegatus.

(12) Any test in which the survival of test organisms is less than ninety (90) percent in each replicate control test chamber or failure to achieve test conditions as specified in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies, such as maintenance of appropriate environmental controls, constitutes an invalid test and the permittee shall immediately retest according to the requirements listed herein. Failure to submit valid test results constitutes a permit violation.

(a) Results of the toxicity tests required as part of this permit condition shall be entered on the Discharge Monitoring Report (DMR) for the month in which it was performed, using the appropriate parameter code. Additionally, complete and accurate test data, including all supporting chemical/physical measurements performed in association with the toxicity tests, as well as dose/response data shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR). The ATMR shall be sent to the following address:

Aquatic Toxicity
Connecticut Department of Environmental Protection
Bureau of Water Management
79 Elm Street
Hartford, CT 06106

(b) If any test result indicates that the maximum daily acute or chronic toxicity limit has been exceeded, a second sample of the effluent shall be collected and tested as described above and the results reported to the Commissioner within 30 days of the receipt of the first set of test results.

(c) If any two consecutive test results or any three test results in a single year indicate that the maximum daily acute or chronic toxicity limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report for the review and approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the Regulations of Connecticut State Agencies describing proposed steps to eliminate the toxic impact of the discharge on the receiving waterbody. Such a report shall include a proposed time schedule to accomplish toxicity reduction.

C. Discharge Serial No. 003-1
Monotoring Location: 1
Description: Coal Pile Runoff Basin Overflow (Code 101060N)
Receiving Stream: Thames River (Basin Code 3000)
Present/Future Water Quality Standard: SC/SB
Flow: Intermittent discharge to occur only when rainfall exceeds 10 year 24 hour storm event

D. Discharge Serial No. 004-1
Monitoring Location: 1
Description: Treated Limestone Pile Runoff Basin Discharge including: limestone pile and yard area runoff, pressure filter backwash water, filter polisher backwash water, boiler blowdown, generation building and services building process drains, generation building oily floor drains through oil/water separator, and transformer containment area drains through oil/water separator (Code 101060n)
Receiving Stream: Thames River (Basin Code 3000)
Present/Future Water Quality Standard: SC/SB
Maximum Daily Flow: 144,000 gallons per day
Maximum Monthly Flow: 1,750,000 gallons per month
Design Flow Rate: 100 gallons per minute

(1) The pH of the discharge shall not be less than 6.0 or greater than 9.0 at any time.

(2) The discharge shall not contain or cause in the receiving stream a visible oil sheen or floating solids.

(3) The discharge and operation of all facilities shall not alter significantly the color, turbidity, taste, odor or levels of coliform bacteria from ambient levels in the receiving waters; nor shall the level of dissolved oxygen in the receiving waters fall below 5.0 mg/l as a result of such discharge.

(4) The concentration of the following pollutants on any grab sample shall at all times be less than or equal to 1.5 times the maximum daily concentration noted below.

Parameter	Units	Average Monthly Limits	Maximum Daily Limits	Minimum Frequency of Sampling	Sample Type
Aquatic Toxicity, Acute		See paragraphs 2.D.(5) and 2.D.(7) below		Quarterly	Daily Composite
Aquatic Toxicity, Chronic		See paragraphs 2.D.(6) and 2.D.(7) below		Quarterly	Daily Composite
Total Suspended Solids	mg/l	20.0	30.0	Weekly	Daily Composite
Total Oil and Grease	mg/l	10.0	13.0	Weekly	Grab Sample
Iron, Total	mg/l	3.0 mg/l	5.0	Weekly	Daily Composite
pH		See para. 2.D. (1) & (4)(d)		Continuous	Instantaneous
Cadmium, Total	mg/l	0.07	0.11	Quarterly	Daily Composite
Copper, Total	mg/l	1.0	2.0	Weekly	Daily Composite
Copper, Total	g/day	27.83	55.94	Weekly	Daily Composite
Lead, Total	mg/l	0.100	0.50	Quarterly	Daily Composite
Nickel, Total	mg/l	1.0	2.0	Quarterly	Daily Composite
Zinc, Total	mg/l	1.0	2.0	Weekly	Daily Composite
Flow		See Notes (a),(b) below		Continuous over discharge	Instantaneous

(a) The permittee shall record the total flow for each day of discharge and report the total flow and number of hours of discharge for each day of sample collection.

(b) The permittee shall record and report the maximum daily flow and total monthly flow for each calendar month

(c) The report shall include a detailed explanation of any violations of the limitations specified above.

(d) The permittee shall report pH values, specifically maximum and minimum, for each day of composite sample collection and for each month. The pH range for each month is defined as the highest and lowest single pH reading during all operating days of the month including periods when sampling is not performed.

(5) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit acute toxicity in the receiving waterbody.

(a) Dilution equivalent to 594,000 gallons per hour (gph) is allocated to a zone of influence for assimilation of toxicity. This allocation shall be used to calculate the instream waste concentration (IWC) according to the formula:

$$IWC = \frac{\text{maximum daily flow}}{\text{(maximum daily flow + allocated zone of influence flow)}} \times 100$$

(b) In lieu of maximum daily flow, the mean effluent flow rate for the previous 30 operating days may be used to calculate the instream waste concentration provided the permittee maintains an accurate record of the total flow and number of hours of discharge for each operating day and provided that the flow rate for any one operating day used in calculating the mean does not exceed the mean flow by more than twenty-five percent (25%).

(c) Acute toxicity is demonstrated and this permit is violated, when the LC_{50} value for the effluent is less than three (3) times the IWC.

(d) Monitoring to determine compliance with this limit shall be performed Quarterly (February, May, August, November) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA 600/4-90/027F) with the following specifications:

(i) Mysidopsis bahia (1-5 days old with no greater than 24 hours range in age) Cyprinodon variegatus (1-14 days old with no greater than 24 hours range in age) shall be used as test organisms.

(ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.

(iii) Test duration shall be 48 hours for Mysidopsis bahia and 48 hours for Cyprinodon variegatus.

(6) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit chronic toxicity in the receiving waterbody.

(a) Dilution equivalent to 594,000 gallons per hour (gph) is allocated to a zone of influence for assimilation of toxicity. This allocation shall be used to calculate the instream waste concentration (IWC) according to the formula:

$$IWC = \frac{\text{maximum daily flow}}{\text{(maximum daily flow + allocated zone of influence flow)}} \times 100$$

(b) In lieu of maximum daily flow, the mean effluent flow rate for the previous 30 operating days may be used to calculate the instream waste concentration provided the permittee maintains an accurate record of the total flow and number of hours of discharge for each operating day and provided that the flow rate for any one operating day used in calculating the mean does not exceed the mean flow by more than twenty-five percent (25%).

(c) Chronic toxicity is demonstrated and this permit is violated, when the LC_{50} value for the effluent is less than twenty (20) times the IWC.

(d) Monitoring to determine compliance with this limit shall be performed Quarterly (February, May, August, November) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA 600/4-90/027F) with the following specifications:

(i) Mysidopsis bahia (1-5 days old with no greater than 24 hours range in age) and Cyrrinodon variegatus (1-14 days old with no greater than 24 hours range in age) shall be used as test organisms.

(ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.

(iii) Test duration shall be 48 hours for Mysidopsis bahia and 48 hours for Cyprinodon variegatus.

(7) (a) Any test in which the survival of test organisms is less than ninety (90) percent or failure to achieve test conditions as specified in EPA 600/4-90/027F, such as maintenance of appropriate environmental controls, constitutes an invalid test and the permittee shall immediately retest according to the requirements listed herein. Failure to submit valid test results constitutes a permit violation.

(b) Results of the toxicity tests required as part of this permit condition shall be entered on the Discharge Monitoring Report (DMR) for the month in which it was performed, using the appropriate parameter code. Additionally, complete and accurate test data, including all supporting chemical/physical measurements performed in association with the toxicity tests, as well as dose/response data shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR). The ATMR shall be sent to the following address:

Aquatic Toxicity
Connecticut Department of Environmental Protection
Bureau of Water Management
79 Elm Street
Hartford, CT 0610613

(c) Any exceedance of a limitation on aquatic toxicity is a violation of this permit. If any test result indicates that the maximum daily acute or chronic toxicity limit for the effluent has been exceeded, a second sample of the effluent shall be collected and tested as described above and the results reported to the Commissioner within 30 days of the receipt of the first set of test results.

(d) If any two consecutive test results or any three test results in a single year indicate that the maximum daily acute or chronic toxicity limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report for the review and approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the Regulations of Connecticut State Agencies describing proposed steps to eliminate the toxic impact of the discharge on the receiving waterbody. Such a report shall include a proposed time schedule to accomplish toxicity reduction.

E. Discharge Serial No. 005-1
Monitoring Location: 1
Description: Limestone Pile Runoff Basin Overflow (Code 101060n)
Receiving Stream: Thames River (Basin Code 3000)
Present/Future Water Quality Standard: SC/SB
Flow: Intermittent discharge to occur only when rainfall exceeds 10 year 24 hour storm event

F. Discharge Serial No. 006-1
Monitoring Location: 1
Description: Treated Coal Pile Runoff Basin Discharge including: coal pile and yard area runoff and maintenance building process plant drains (Code 101060n)
Receiving Stream: Thames River (Basin Code 3000)
Present/Future Water Quality Standard: SC/SB
Maximum Daily Flow: 144,000 gallons per day
Maximum Monthly Flow: 1,150,000 gallons per month
Design Flow Rate: 100 gallons per minute

(1) The pH of the discharge shall not be less than 6.0 or greater than 9.0 at any time.

(2) The discharge shall not contain or cause in the receiving stream a visible oil sheen or floating solids.

(3) The discharge shall not cause visible discoloration or foaming in the receiving waters.

(4) The concentration of the following pollutants on any grab sample shall at all times be less than or equal to 1.5 times the maximum daily concentration noted below.

Parameter	Units	Average Monthly Limits	Maximum Daily Limits	Minimum Frequency of Sampling	Sample Type
Aquatic Toxicity, Acute		See paragraphs 2.F.(5) and 2.F.(7) Below		Quarterly	Daily Composite
Aquatic Toxicity, Chronic		See paragraphs 2.F.(6) and 2.F.(7) Below		Quarterly	Daily Composite
Total Suspended Solids	mg/l	20.0	30.0	Weekly	Daily Composite
Total Oil and Grease	mg/l	10.0	13.0	Weekly	Grab Sample
Iron, Total	mg/l	3.0	5.0	Weekly	Daily Composite
Cadmium, Total	mg/l	0.07	0.11	Quarterly	Daily Composite
Copper, Total	mg/l	1.0	2.0	Weekly	Daily Composite
Copper, Total	g/day	27.83	55.94	Weekly	Daily Composite
Lead, Total	mg/l	0.1	0.5	Quarterly	Daily Composite
Nickel, Total	mg/l	1.0	2.0	Quarterly	Daily Composite
Zinc, Total	mg/l	1.0	2.0	Weekly	Daily Composite
pH		See 2)F.(1) above		Weekly	Range during Composite
Flow		See Notes (a),(b) (c) below		Continuous	Instantaneous

(a) The permittee shall record the total flow for each day of discharge and report the total flow and number of hours of discharge for each day of sample collection.

(b) The permittee shall record and report the maximum daily flow and total monthly flow for each calendar month.

(c) The report shall include a detailed explanation of any violations of the limitations specified above.

(5) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit acute toxicity in the receiving waterbody.

(a) Dilution equivalent to 594,000 gallons per hour (gph) is allocated to a zone of influence for assimilation of toxicity. This allocation shall be used to calculate the instream waste concentration (IWC) according to the formula:

$$IWC = \frac{\text{maximum daily flow}}{\text{(maximum daily flow + allocated zone of influence flow)}} \times 100$$

(b) In lieu of maximum daily flow, the mean effluent flow rate for the previous 30 operating days may be used to calculate the instream waste concentration provided the permittee maintains an accurate record of the total flow and number of hours of discharge for each operating day and provided that the flow rate for any one operating day used in calculating the mean does not exceed the mean flow by more than twenty-five percent (25%).

(c) Acute toxicity is demonstrated and this permit is violated when the LC_{50} value for the effluent is less than three (3) times the IWC.

(d) Monitoring to determine compliance with this limit shall be performed Quarterly (February, May, August, November) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA 600/4-90/027F) with the following specifications:

(i) Mysidopsis bahia (1-5 days old with no greater than 24 hours range in age) and Cyprinodon variegatus (1-14 days old with no greater than 24 hours range in age) shall be used as test organisms.

(ii) Synthetic or natural seawater adjusted to a salinity of 28-32 shall be used as dilution water in the tests.

(iii) Test duration shall be 48 hours for Mysidopsis bahia and 48 hours for Cyprinodon variegatus.

(6) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit chronic toxicity in the receiving waterbody.

(a) Dilution equivalent to 594,000 gallons per hour (gph) is allocated to a zone of influence for assimilation of toxicity. This allocation shall be used to calculate the instream waste concentration (IWC) according to the formula:

$$IWC = \frac{\text{maximum daily flow}}{\text{(maximum daily flow + allocated zone of influence flow)}} \times 100$$

(b) In lieu of maximum daily flow, the mean effluent flow rate for the previous 30 operating days may be used to calculate the instream waste concentration provided the permittee maintains an accurate record of the total flow and number of hours of discharge for each operating day and provided that the flow rate for any one operating day used in calculating the mean does not exceed the mean flow by more than twenty-five percent (25%).

(c) Chronic toxicity is demonstrated and this permit is violated when the LC_{50} value for the effluent is less than twenty (20) times the IWC.

(d) Monitoring to determine compliance with this limit shall be performed Quarterly (February, May, August, November) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA 600/4-90/027F) with the following specifications:

(i) Mysidopsis bahia (1-5 days old with no greater than 24 hours range in age) and Cyprinodon variegatus (1-14 days old with no greater than 24 hours range in age) shall be used as test organisms.

(ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.

(iii) Test duration shall be 48 hours for Mysidopsis bahia and 48 hours for Cyprinodon variegatus.

(7) (a) Any test in which the survival of test organisms is less than ninety (90) percent or failure to achieve test conditions as specified in EPA 600/4-90/027F, such as maintenance of appropriate environmental controls, constitutes an invalid test and the permittee shall immediately retest according to the requirements listed herein. Failure to submit valid test results constitutes a permit violation.

(b) Results of the toxicity tests required as part of this permit condition shall be entered on the Discharge Monitoring Report (DMR) for the month in which it was performed, using the appropriate parameter code. Additionally, complete and accurate test data, including all supporting chemical/physical measurements performed in association with the toxicity tests, as well as dose/response data shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR). The ATMR shall be sent to the following address:

Aquatic Toxicity
Connecticut Department of Environmental Protection
Bureau of Water Management
79 Elm Street
Hartford, CT 06106

(c) Any exceedance of a limitation on aquatic toxicity is a violation of this permit. If any test result indicates that the maximum daily acute or chronic toxicity limit for the effluent has been exceeded, a second sample of the effluent shall be collected and tested as described above and the results reported to the Commissioner within 30 days of the receipt of the first set of test results.

(d) If any two consecutive test results or any three test results in a single year indicate that the maximum daily acute or chronic toxicity limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report for the review and approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the Regulations of Connecticut State Agencies describing proposed steps to eliminate the toxic impact of the discharge on the receiving waterbody. Such a report shall include a proposed time schedule to accomplish toxicity reduction.

G. Discharge Serial No. 008
Description: Intake Structure Traveling Screen Backwash (Discharge Code 101060n)
Receiving Stream: Thames River (Basin Code 3000)
Present/Future Water Quality Standard: SC/SB
Maximum Daily Flow: 604,800 gallons per day

(1) In the event of unusual incidents of large numbers of schooling fish being impinged over a short period of time, the Department of Environmental Protection shall be notified immediately and a written report of the incident shall be filed. The report shall include the species, sizes, approximate numbers, time of occurrence, operating mode of the plant at the time, and possible reasons for the occurrence.

3. On or before 60 days after permit issuance and annually thereafter, the permittee shall complete a piping survey and examination of the non-contact cooling water system (DSN 001) and shall submit to the Commissioner a report describing the results of this evaluation and a written certification that DSN 001 conform to the following requirements:

(a) The discharge is comprised solely of non-contact cooling water and the only source of the cooling water is the Thames River.

(b) No chemicals of any type with the exception of total residual oxident are added to the cooling water at any point.

(c) The piping and all appurtenances which comprise DSN 001 are completely segregated from any contaminant sources. Any sources of potential contamination or connections to said piping and appurtenances which are inconsistent with paragraph 3.(a) and 3.(b) immediately above are prohibited.

4. On or before 365 days after the date of issuance of this permit, the permittee shall submit for the Commissioner's review a comprehensive and thorough report which describes and evaluates the feasibility of alternatives to reduce the contribution of heavy metals to the cooling water effluent from DSN 001 resulting from corrosion and galvanic action on materials exposed to the effluent, and proposes a schedule for implementation of the described alternatives.

5. A) All sample analyses required by this permit shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health or approved in writing by the Connecticut Department of Environmental Protection for monitoring at this facility.

   B) The Minimum Levels specified below represent the concentration at which quantification must be achieved and verified during the chemical analyses for these parameters. Analyses for these parameters must include check samples within ten percent of the specified Minimum Level and calibration points equal to or less than the specified Minimum Level.

Parameter	Minimum Level
Copper	5.0 ug/l
Lead	5.0 ug/l
Nickel	5.0 ug/l

6. A) (1) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible consistent with the requirements of paragraph 5.

   (2) Effluent analyses in which quantification was verified during the analysis at or below the minimum levels specified in paragraph 5.B) above and which indicate that a parameter was not detected shall be reported as "less than x" where "x" is the numerical value equivalent to the analytical method detection limit for that analysis.

   B) Results of effluent analyses which indicate that a parameter was not present at a concentration greater than or equal to the Minimum Level specified for that analysis shall be considered equivalent to zero (0.0) for purposes of determining compliance with effluent limitations or conditions specified in this permit.

7. Coal & Limestone Raw Materials Leak Detection Program
   Monitoring Location: Groundwaters in the watershed of the Thames River

   (A) **Monitoring Locations:** The groundwaters shall be monitored at the following locations as shown on the map entitled "Figure 1, Monitoring Well Location Map, AES Thames, Inc., Uncasville, Connecticut" prepared by Environmental Risk Limited, Inc. dated January 30, 1996 and at such locations as are agreed to by AES Thames, Inc. and approved by the Commissioner:

   MW-1
   MW-2
   MW-3
   MW-5
   MW-6* * To be constructed

(B) **Baseline Sampling:**

The groundwater leak detection program shall begin the first scheduled monthly sampling period within 30 days after issuance of this permit. Groundwater monitoring shall be conducted on a monthly and quarterly basis, as specified, for the following parameters to establish a baseline groundwater quality monitoring program. Following the initial year of monitoring the permittee shall submit for the review and approval of the Commissioner a report describing the results of the monitoring program and recommending any proposed modifications to the program. If the Commissioner approves the report without modification to the monitoring program, groundwater monitoring shall be conducted pursuant to the requirements of Section C, below. If the Commissioner, following his review, is not satisfied that an adequate baseline has been established, monitoring shall continue to be performed under this section until such time as the Commissioner approves or specifies another schedule:

Parameter	Units	Minimum Frequency of Sampling	Minimum Detection Level
Water Level Elevation	Feet	Monthly	10ths
pH	SU	Monthly	
Specific Conductance	umhos/cm	Monthly	
Total Dissolved Solids	mg/l	Quarterly	
Total Suspended Solids	mg/l	Quarterly	
Chemical Oxygen Demand (COD)	mg/l	Quarterly	5.0
Aluminum(Total)	ug/l	Quarterly	100
Arsenic(Total)	ug/l	Quarterly	10.0
Beryllium(Total)	ug/l	Quarterly	5.0
Cadmium(Total)	ug/l	Quarterly	1.0
Chromium(Total)	ug/l	Quarterly	5.0
Copper(Total)	ug/l	Quarterly	5.0
Iron(Total)	ug/l	Quarterly	5.0
Mercury(Total)	ug/l	Quarterly	0.2
Nickel(Total)	ug/l	Quarterly	40.0
Selenium(Total)	ug/l	Quarterly	5.0
Sulfate(Total)	mg/l	Quarterly	1.0
Sulfide(Total)	mg/l	Quarterly	1.0
Zinc(Total)	ug/l	Quarterly	20.0

(1) Groundwater monitoring shall consist of grab samples conducted monthly and quarterly as indicated above and reported to the Director of the Permitting, Enforcement & Remediation Division according to the following schedule:

Monthly Sampling:

For Monthly sampling the reporting date shall be the same as for the quarterly sampling if conducted during the same month. All other monthly sampling shall be reported on the subsequent quarters reporting date.

Quarterly Sampling Collected In:	Reporting Date:
January	April 1
April	July 1
July	October 1
October	January 1

(C) **Subsequent Monitoring:**

If the Commissioner approves the initial annual report, subsequent sampling shall be conducted as follows: Groundwaters shall be monitored on a monthly and quarterly basis for the following parameters as specified in paragraph 7A and on an annual basis for those additional parameters identified in Paragraph 7B which have been detected.

Parameter	Units	Minimum Frequency of Sampling	Minimum Detection Level
pH	SU	Monthly	
Specific Conductance	umhos/cm	Monthly	
Water Level Elevation	feet	Quarterly	10ths
Total Dissolved Solids	mg/l	Quarterly	
Total Suspended Solids	mg/l	Quarterly	
Chemical Oxygen Demand (COD)	mg/l	Quarterly	5.0
Sulfate(Total)	mg/l	Quarterly	1.0
Sulfide(Total)	mg/l	Quarterly	1.0
Iron(Total)	ug/l	Quarterly	5.0
Aluminum(Total)	ug/l	Quarterly	100.0

The permittee shall notify DEP within the annual report specified in paragraph 7.(B) which parameters in addition to those specified above, were identified. Those additional parameters shall be included in the monitoring program specified in paragraph 7.(C) and shall continue to be monitored on a annual basis during the Fall (October) sampling event and reported together with the results of the October quarterly monitoring event.

(1) Results of the monthly specific conductance and pH monitoring shall be reported in accordance with the schedule specified in paragraph 7.B(1). Upon any indication that liner failure or leakage may have occurred DEP must be notified as soon as possible with a recommendation for investigating the potential source of leakage or liner failure and appropriate corrective actions. All monitoring and analyses results shall be reported to the Director of Permitting, Enforcement and Remediation Division.

D. **Sampling Conditions:**

Water level elevation shall be measured at all groundwater monitoring locations prior to each sample collection. Following measurement of water level, the wells must be evacuated so that at least three (3) times the volume of water standing in the well is evacuated prior to sampling.

E. **Sample Analysis:**

1. Samples shall not be field filtered. All samples shall be placed in the appropriate containers for the approved testing method.

2. All sample analyses required by this permit shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health Services or approved in writing by the Commissioner.

3. Analytical results for each parameter shall be reported together with their method detection limits. The value of each parameter shall be reported to the maximum level of accuracy and precision possible. Failure to submit data in accordance with the procedures and protocols set forth in this permit shall constitute a permit violation.

This permit shall expire on May 28, 2001.

The permittee shall comply with the following sections of the Regulations of Connecticut State Agencies which are hereby incorporated into this permit:

Section 22a-430-3 General Conditions

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit

(e) Duty
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(l) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)
(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

22a-430-4 Procedures and Criteria

(a) Duty to Apply
(b) Duty to Reapply
(c) Application Requirements
(d) Preliminary Review
(e) Tentative Determination
(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(k) Submission of Plans and Specifications. Approval.
(l) Establishing Effluent Limitations and Conditions
(m) Case by Case Determinations
(n) Permit issuance or renewal
(o) Permit Transfer
(p) Permit revocation, denial or modification
(q) Variances
(r) Secondary Treatment Requirements
(s) Treatment Requirements for Metals and Cyanide
(t) Discharges to POTWs - Prohibitions

Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(6), (j)(9)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of Section 22a-430-3.

This Permit requires the payment of an annual fee as set forth in Section 22a-430-7 of the Regulations of Connecticut State Agencies.

The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Clean Water Act or the Connecticut General Statutes or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Clean Water Act or Connecticut General Statutes or regulations adopted thereunder which are then applicable.

Entered as a Permit of the Commissioner on the 28th day of May, 1996.

Sidney J. Holbrook
Commissioner

APPLICATION NO. 93-569
PERMIT ID: CT0026298

WCIS

FACT SHEET

Location Address:

Name AES Thames, Inc.

Street 141 Depot Road City Uncasville

State Connecticut Zip 06382

Contact Name Mark Miller

Site Category: Point (XX) Non-point ( )

SIC CODE: 4911 4961 (Required for NPDES permits)

CHECK ALL THAT APPLIES

___ EPA SIGNIFICANT INDUSTRIAL USER INDUSTRIAL USER

_X_ EPA CATEGORICAL SIGNIFICANT INDUSTRIAL USER

_____ **MUNICIPAL**

____ **UIC** ____ **STATE** _X_ **NPDES**

_X_ **MAJOR** ____ **SIGNIFICANT MINOR** ___ **MINOR**

Compliance Schedule Included _X_Yes ___No Order No.___

Pollution Prevention Requirement_X_

Environmental Equity Requirement___

Ownership Code: Private (X) Federal ( ) State ( )

Municipal (town-owned only) ( ) Other public ( )

For UIC Permits: Total Wells ___ Well Type 1__ 2___ 3___

ENGINEER: Charles Fredette

PERMIT FEES

ANNUAL FEE $ 5,450.00