UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
OFFICE OF ECOSYSTEM PROTECTION
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS 02114

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES PERMIT NO.: MA0004367

PUBLIC COMMENT PERIOD:

PUBLIC NOTICE NO.:

NAME AND ADDRESS OF APPLICANT:

Yankee Atomic Electric Company
49 Yankee Road
Rowe, Massachusetts 01367

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Yankee Nuclear Power Station
49 Yankee Road
Rowe, Massachusetts 01367

SIC CODE: 4911

RECEIVING WATER: Sherman Reservoir and the Deerfield River
(Basin Code MA33-01)

CLASSIFICATION: Class B - Cold Water Fishery

I. Proposed Action, Type of Facility, and Discharge Location.

The above named applicant has applied to the U.S. Environmental Protection Agency for reissuance of its NPDES permit to discharge into the Deerfield River, in Rowe, Massachusetts. The facility is in process of being decommissioned. The discharges consist of storm water, low volumes of non-contact cooling water, spent fuel pool water, hydrostatic test water, and discharges of water associated with the plant decommissioning.

II. Description of Discharge.

A quantitative description of the discharges in terms of significant effluent parameters may be found in the revised application for reissuance dated December 10, 2002. A summary of discharge monitoring data may be found in Fact Sheet, Attachment C. A schematic drawing of the flow of water at the facility and the various discharges from the facility is presented on Attachment A. A site plan is presented in Attachment B.

III. Limitations and Conditions.

The proposed effluent limitations and monitoring requirements may be found in the draft NPDES permit.

IV. Permit Basis and Explanation of Effluent Limitations Derivation.

A. General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. This draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and any applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136.

EPA is required to consider a) technology-based requirements, b) water quality-based requirements, and c) all limitations and requirements in the current/existing permit, when developing permit limits. These requirements are described in the following paragraphs.

TECHNOLOGY-BASED REQUIREMENTS

Technology-based requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (see 40 CFR §125 Subpart A). For existing sources, technology-based requirements according to best practicable control technology currently available (BPT) are applied for conventional, non-conventional, and toxic pollutants. More stringent technology-based requirements are applied through best conventional control technology (BCT) for conventional pollutants; and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. New source performance standards (NSPS) are applied to new sources, to control conventional, non-conventional, and toxic pollutants.

The effluent limitations guidelines for the Steam Electric Power Generating Point Source Category found at 40 CFR §123, no longer apply to Yankee as the facility has not produced electricity since 1992. The Steam Electric Guidelines do not consider discharges related to the decommissioning of powerplants. The volume of discharge from Yankee has been reduced almost one thousandfold, with some processes completely eliminated. In the absence of published technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1) of the CWA to establish effluent limitations on a case-by-case basis using best professional judgement (BPJ). See 40 CFR §§125.3 (c)(2) and (c)(3). The factors to be considered in developing BAT limits are set forth at 40 C.F.R. §§ 125.3(c)(2)(i) and (ii) and 125.3(d)(3)(i) - (vi) and include, among other things, the age of existing facilities, engineering issues, process changes, non-water quality-related environmental impacts, and the costs of achieving required effluent pollutant reductions.

WATER QUALITY-BASED REQUIREMENTS

Under Section 301(b)(1)(C) of the CWA and EPA regulations NPDES permits must contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water quality standards.

Water quality standards consist of three parts: (1) beneficial designated uses for a water-body or a segment of a water-body; (2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (3) antidegradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards, found at 314 CMR 4.00, include these elements. The State will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site specific criteria is established.

The permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that causes or has the "reasonable potential" to cause or contribute to an excursion above any water quality standard. An excursion occurs if, for example, the projected or actual in-stream concentration exceeds an applicable water quality criterion. In determining "reasonable potential", EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from the permit's reissuance application, monthly discharge monitoring reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the indicator species used in toxicity testing; (4) known water quality impacts of processes on waste waters; and (5) where appropriate, dilution of the effluent in the receiving water.

MONITORING FOR RADIATION IN THE EFFLUENT

EPA and Massachusetts Department of Environmental Protection (DEP) are responsible for establishing permit limits and conditions governing pollutants discharged in effluent. The Nuclear Regulatory Commission (NRC) in concert with the Commonwealth of Massachusetts Department of Public Health (DPH) is responsible for the radioactivity level of the discharge consistent with the provisions found at 10CFR §§20.1301 and 20.1302.

Radioactive releases at the Yankee Nuclear Power Station (YNPS) are conducted in compliance with programs and procedures governed by plant technical specifications approved by the NRC. These technical specifications conform to requirements contained in federal regulations. Specifically, all plant releases comply with (1) EPA's limits in 40 CFR Part 190, (2) NRC's requirements in 10 CFR Part 20, and 10 CFR Part 50, Appendix I [ALARA].

Extensive and comprehensive environmental monitoring has been conducted by both YNPS and the DPH to ensure there has been no adverse impact to the environment or public. When the plant was in operation prior to shutdown in 1992, all releases were well within the regulatory limits. Subsequent to the plant shutdown and the beginning of decommissioning, release levels have been significantly reduced and are much less than the level during plant operation.

The MA DPH Radiation Control Program has specifically monitored river water in the Deerfield River downstream of the plant as part of its program to assess impact of the plant. Their results indicate that:

> *"… at no time have any of the river water samples analyzed by the department … shown radionuclide concentrations above the allowable federal and/or state limits. Nor have these radionuclide concentrations exceeded the technical specifications that were and still are in place for governing the discharges from the Yankee Rowe nuclear power station."* (Letter, R. Hallisey (MA DPH – Director, Radiation Control Program) to L. Laffond (Chairman, Rowe Board of Selectman), dated July 21, 1994.)

Monitoring for radiation in the effluent prior to discharge is discussed on page 11of this fact sheet.

STATE CERTIFICATION

Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located which determines that all water quality standards, in accordance with Section 301(b)(1)(C) of the CWA, will be satisfied. Regulations governing state certification are set forth in 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

B. Water Quality Standards and Designated Uses

The permittee discharges to the Sherman Reservoir within Segment MA 33-01 of the Deerfield River. Pacific Gas and Electric National Energy Group manages Sherman Reservoir for hydroelectric power generation. The 13.3 mile segment of the river is described as follows: *The Massachusetts portion of the Deerfield River begins at the Vermont-Massachusetts border, which intersects the Sherman Reservoir on the Massachusetts side at Monroe and Rowe. From here the Deerfield River twists south and west through a narrow valley forming the border first between Monroe and Rowe and then Rowe and Florida. In this stretch it flows through the hydro station located at dam at Sherman Reservoir and the New England Power Dam #5 at Monroe Bridge. About five miles further downstream, the Fife Brook dam impounds the river and releases the water from the hypolimnion. As the River reaches the eastern point of the Hoosac Tunnel it turns south and east entering Charlemont where the gradient lessons. The segment ends here at the confluence with the Cold River along Route 2 in the Mohawk Trail State Forrest.* There are five dams on the Deerfield River below the Sherman Dam in Rowe. They are; PG&E No. 5 Dam at Monroe Bridge, Fife Brook Dam in the Town of Florida, No. 4 Dam in Shelburne Falls, No. 3 Dam also in Shelburne Falls, Garner Falls operated by Northeast utilities, No. 2 Dam in Buckland. (There is no Dam No. 1).

The Deerfield River has been classified as Class B - Cold Water Fishery by DEP. The Massachusetts Surface Water Quality Standards, 314 Code of Massachusetts Regulations ("CMR") 4.05(3)(b) state that Class B waters have the following designated uses: *These waters are designated as a habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. Where designated they shall be suitable as a source of public water supply with appropriate treatment. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.*

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those water-bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such require the development of total maximum daily loads (TMDL). Segment MA33-01 of the Deerfield River is not listed as a non-attainment waterbody in the 1998, 303(d) report as it meets Class B Water Quality Standards. There are no surface water intakes for public drinking water supplies on the Deerfield River.

C. Essential Fish Habitat (EFH)

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C.§ 1801 et seq. (1998)), EPA is required to consult with National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat: as waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C.§ 1802(10)). Adverse impact means any impact, which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910(a)).

Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id. Essential fish habitat is only designated for fish species for which Federal Fisheries Management Plans exist (16 U.S.C.§ 1855(b)(1)(A)). EFH designations for New England were approved by U.S. Department of Commerce on March 3, 1999.

EPA and DEP have discussed the fisheries issues in the Connecticut River/Deerfield River system with NMFS. The Deerfield River has been designated as EFH for the Atlantic salmon *(Salmo salar)*. The salmon are stocked in the upper reaches of the Deerfield River. Dams on the river, however, block return migration of stocked fish.

A formal EFH consultation does not appear necessary as the conditions in this draft permit represent an extensive reduction in the thermal load to the Deerfield River. The draft permit sets limitations and controls for all discharges that are protective of the most sensitive receiving water species. Consultation may be initiated by NMFS should they determine the proposed discharge adversely impacts EFH.

D. Abbreviated Permitting History

June 30, 1971	Initial permit application to Army Corps of Engineers (predates NPDES)
February 1, 1974	Request by Yankee for thermal variance under Section CWA §316(a)
September 13, 1974	NPDES Permit No. MA0004367 issued to Yankee
July 31, 1980	NPDES permit reissued
September 29, 1980	Reapplication signed
August 21, 1981	EPA Application complete letter
March 23, 1983	Public Notice of draft permit
June 16, 1983	NPDES Permit Reissuance
April 11, 1985	Public hearing for draft permit
August 12, 1988	CWA §401 certification of the draft permit
August 17, 1988	Permit Reissuance
August 13, 1990	Draft permit modification
May 8, 1991	Public Notice of draft permit modification (never issued)

June 5, 1991	NPDES Public Hearing for draft permit modification
October 1, 1991	Yankee shut down for refueling
February 27, 1992	Facility permanently shut down
February 17, 1993	Reapplication submitted for decommissioning activities
December 13, 1993	NPDES Application complete letter
March 8, 1995	Yankee briefs EPA on decommissioning activities
October 17, 2000	Initial contact from Triumvirate Environmental (Yankee Contractor)
March 28, 2002	Pre-application meeting at EPA
July 16, 2002	Memo from Yankee application sample analysis clarification
December 12, 2002	NPDES DEP/EPA Reapplication Submission
January 10, 2003	NPDES Application Complete letter sent
January 28, 2003	NPDES permit writer facility tour and meeting at Yankee

E. Description of Facility

Some portions of the December 10, 2002 reapplication and supplemental information submitted to EPA by the Yankee Atomic Electric Company (Yankee) are paraphrased in this document without further reference. All documents used in the preparation of the permit and fact sheet are part of the administrative record and are retained on file by EPA.

The 185-megawatt pressurized-water Nuclear Station was the third civilian nuclear power plant built in the United States. Construction of the plant was completed in 1960. During its 32-year operating history, the Yankee plant generated over 34 billion kilowatt-hours of electricity, and had a lifetime capacity factor of 74%.

The Yankee Nuclear Power Station (YNPS) was permanently shut down in February of 1992 and began preparing for decommissioning. Plans are to dismantle the plant and release the site for future use. During late 1993 and early 1994, the four steam generators, the pressurizer, and reactor internals were removed and shipped to a low-level radioactive waste disposal facility in Barnwell, South Carolina. During decommissioning, there is an ongoing need to operate certain plant systems, requiring continued water use and discharge under the NPDES permit.

F. Cooling Water Intake Structure (CWIS)

Yankee continues to use Sherman Reservoir, within the Deerfield River, as the source of water for the plant's cooling water system. Therefore the Clean Water Act (CWA), § 316(b) applies to Yankee as a facility which withdraws cooling water from a water of the United States. To satisfy §316(b) of the CWA, Yankee must demonstrate to the satisfaction of the EPA and DEP, that the location, design, construction, and capacity of the facility's cooling water intake structure (CWIS) reflects the Best Technology Available (BTA) for minimizing adverse environmental impacts. EPA and DEP made the initial 316(b) determination that Yankee's CWIS met BTA in 1974.

When the plant was operating, large capacity pumps drew water through a 10 ft (120-inch)

diameter intake pipe located about 200 feet offshore in 70 feet of water. A grating was installed across the intake to prevent large foreign materials from entering the Circulating Water Piping. During operation, traveling screens were located in the circulating water pump suction within the Screenwell House to remove foreign material from the intake water.

With the commencement of site decommissioning, the large intake pumps were removed and replaced with an Auxiliary Service Water System (ASW) which provides non-contact cooling water directly to the heat exchangers of the Spent Fuel Pool. Water now flows passively through the old intake pipe to the Screenwell House. A portion of the traveling screens were removed, allowing water to move freely through the 200 ft length of pipe between the forebay area and Sherman Reservoir. Fish entering the forebay area of the Screenwell House are not restricted in movement back to Sherman Reservoir.

The ASW pump draws its suction from the Screenwell House forebay through a 4 1/2-inch diameter pipe fitted with a backwashable filter screen. This is located upstream of the 10 ft diameter intake piping. The ASW currently discharges through Outfall 001, at a maximum flow of 0.22 MGD, or about 150 GPM. During past plant operation the maximum flow had been 225 MGD, or about 156,250 GPM, thus the maximum flow volume of the intake piping in Sherman Reservoir is minimal compared with past operations. The thousand fold reduction in flow and the general configuration of the existing ASW intake pipe, substantially reduces the potential for the impingement or entrainment of aquatic organisms into the cooling water system. In addition, within three months of the effective date of the permit, the permittee is required to evaluate the flow velocity at the existing filter and if a technology is available, reduce the approach velocity consistent with EPA guidance to minimize potential impingement. Technologies to be evaluated should include additional screening. Collectively, these features of the facility cooling water intake are considered BTA for minimizing adverse environmental impacts. EPA may reevaluate this determination upon receipt of the intake approach velocity evaluation.

G. Discharge Outfalls

Historically, non-contact cooling water and process water were discharged to the environment via three outfalls. Decommissioning activities have resulted in the elimination of two of these outfalls. The status of the outfalls, in addition to the management of storm water on site, and other planned water uses and discharges are described below. See also, Fact Sheet Attachment D.

OUTFALL 001

Outfall 001 remains in use. The original source of effluent, the Circulating Water System(CWS), has been deactivated and replaced by the Auxiliary Service Water System (ASW). All of the CWS components have been dismantled, with the exception the Intake and Discharge structures and subsurface piping. Outfall 001 discharges approximately 100 feet from the Sherman Station Intake.

The ASW provides non-contact cooling water to the Spent Fuel Pool heat exchanger and dilution for test tank effluent. The test tank holds water used for hydrostatic testing. The test tank effluent was previously part of the primary plant effluent controlled through Outfall 010. Both the ASW and test tank water are now discharged through Outfall 001.

Test tank effluent, which contains evaporator distillate, occurs as 8,000-gallon batch releases that may total as many as 100,000 gallons per year. An antifoaming agent (silicone-glycol compound, Dow Corning 544 → Antifoam) is added to the evaporator prior to operation, at a rate of 750 ml per batch release. Generally the antifoaming agent is added at the beginning of the process and depending on the water source, additional agent may be added as required. The distillate is passed through a small demineralizer prior to release through the test tanks. Yankee may process waste water by other means should the evaporator not be available as the result of onsite decommissioning activities. Other methods may include demineralization and /or filtration which will produce effluent of similar discharge quality.

EPA and DEP intend to discontinue Yankee's Clean Water Act, Section 316(a) waiver. Section 316(a) of the CWA provides for a variance from effluent limitations for the thermal component of a discharge. Less stringent thermal limits may be included in permits if the discharger demonstrates that such effluent limits are more stringent than necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is made. The EPA Regional Administrator granted a 316(a) waiver in 1974.

The draft permit limits the auxiliary cooling water (ASW) discharge to 0.22 MGD. The allowable ASW discharge volume permitted in this draft is less that one tenth of one percent of the allowable non-contact cooling water (and heat rejection) allowed in the current permit. The ASW discharge will meet the State Water Quality Criteria for temperature after minimal initial mixing.

The thermal criteria for receiving waters designated as Class B -Cold Water Fisheries are: *Not greater than 68 degrees F (20 degrees C). The rise in temperature due to discharge shall not exceed 3 degrees F (1.7 degrees C).*

The Massachusetts requirements for mixing zones are found at *314 CMR 4.03(2). Mixing Zones - In applying these standards the Department* [DEP] *may recognize a limited area or volume of*

a waterbody as a mixing zone for the initial dilution of a discharge. Waters within a mixing zone may fail to meet specific water quality criteria provided the following conditions are met:

> *(a) Mixing zones shall be limited to an area or volume as small as feasible. The location, design and operation of the discharge shall minimize impacts on aquatic life and other beneficial uses.*
> *(b) Mixing zones shall not interfere with the migration or free movement of fish or other aquatic life. There shall be safe and adequate passage for swimming and drifting organisms with no deleterious effects on their populations.*
> *(c) Mixing zones shall not create nuisance conditions, accumulate pollutants in sediments or biota in toxic amounts or otherwise diminish the existing or designated uses of the segment disproportionately.*

The temperature of the Spent Fuel Pool (SFP) changes with environmental conditions and is currently below 75N F. Most of the spent fuel has been removed from the pool and permanently stored in dry cask storage. Therefore, minimal additional heat will be added to the ASW discharge. The pool will cease acquiring heat from spent fuel assemblies entirely when the removal process is complete. As a result, the) T of the ASW discharge will approach zero. The ASW is now used only occasionally, as infrequently as one day per month. The ongoing spent fuel assembly removal process makes defining a mixing zone impractical and unnecessary.

Outfall 001 Limits

<u>OUTFALL 001A</u>

<u>Flow</u>

Flow monitoring is required for all discharges based on the provisions found at 40 CFR §122.44(i)(1)(ii). The flow limit has been reduced from 225 MGD to 0.22 MGD.

<u>Total Suspended Solids (TSS)</u>

Total suspended solids are limited in the draft permit to a daily maximum concentration of 100 mg/l. The Effluent Guideline Limitations (EGL) for power generation facilities no longer directly apply to Yankee. The EGLs for the Steam Electric Power Generating Point Source Category, however, limit TSS to a maximum daily concentration of 100 mg/l, and may be used as guidance for establishing limits based on BPJ. The limit is based on Best Professional Judgement (BPJ) under the authority granted in Section 401(a)(1) of the Clean Water Act (CWA) and 40 CFR §125.3.

pH Range

The pH range limits are 6.5 to 8.3 Standard Units (SU). pH shall be sampled quarterly. The draft permit pH limitations are required by state water quality standards found at CMR 4.05(b)(3). The permit allows for comparison samples to be taken from outfall 001 and the forebay (influent) to establish whether an effluent pH value of less than 6.5 SU is due to natural causes. The pH of the Sherman Reservoir is occasionally less than 6.5 SU, naturally. If the influent and effluent sample results are less than 0.5 SU apart, the permittee shall be considered to be in compliance.

Hydrazine

Hydrazine was formally used to protect the steam generators from corrosion during periods when the facility was not producing power. The use of hydrazine has been discontinued with the removal of the steam generators. There is no other source of hydrazine on site, therefore, the limit for hydrazine is not carried forward in the draft permit.

OUTFALL 001(B) INTERNAL SAMPLING POINT

Spent Fuel Pool Draining

A significant decommissioning activity is the transfer of spent fuel from the Spent Fuel Pool (SFP) to an on-site Independent Spent Fuel Storage Installation (ISFSI). Once completed, the SFP must be drained before the building can be dismantled. After treatment, which will include demineralization and filtration, draining of SFP water shall be through Outfall 001.

The SFP volume is approximately 145,000 gallons of water containing boron. Yankee estimates that an additional 40,000 gallons of make-up and rinse water bring the total discharge volume to approximately 185,000 gallons. The makeup water (about 20,000 gallons) will maintain the proper water depth in the SFP by filling the volume that was displaced by the spent fuel assemblies as they are removed. No additional boron shall be added to the make-up water. An additional 20,000 gallons of rinse water will be used in the process.

Prior to discharge of the SFP, which contains a concentration of non-radioactive boron estimated at 850 mg/l and low level radioactivity, water will pass through a purification system to minimize the release of any radioactive materials to the environment. The purification system will involve demineralization that consists of a mixed bed demineralizer (60% cation and 40% anion resins, optimized to the pool makeup water), followed by a polishing filter utilizing filters with a mesh size no larger than 5 micons. The deminerializer reduces radiological activity to ensure compliance with the NRC requirements of 10 CFR Part 50 and YNPS's Technical Specifications. The filter removes insoluble particles that may pass through the demineralizer unit. The treated SFP water will then be directed to the ASW and discharged via Outfall 001.

The flow rate through the system is estimated to be approximately 10 gpm, with a maximum daily discharge of 14,400 Gallons Per Day (GPD). Draining of the SFP and associated rinse water may occur in a series of batch releases over a period of a month or longer.

The treated water will be monitored with an in-line, real-time radiation monitor prior to its release to Outfall 001. In accordance with the YNPS radiological technical specifications, the system will also provide for grab sample collection at a point between post treatment and the real-time monitor. This will further enhance monitoring of the purification system performance, and provide an additional data point to confirm any activity release determinations and dose projections resulting from discharge to Sherman Reservoir.

> *The calculated radiological exposure from the release of the SFP to the general public will be considerably less than 0.03 mrem in the year the SFP is discharged. By comparison, the background radiation exposure that is received by all members of the public from all sources in the United States averages 360 mrem every year. Therefore, the release of the SFP will result in an annual radiation exposure 12,000 times lower than that from background contributions.*

<u>Boron Released From The Spent Fuel Pool</u>

Yankee contracted with Triumvirate Environmental, Inc. (TEI) to perform a literature investigation of the potential effects of boron in the environment and to human health. TEI began by reviewing EPA New England's documentation concerning the effects of boron on human health and the environment, compiled in 1992. TEI expanded upon EPA's work to include the results of more recent research. The following are excerpts from the December 10, 2002 YNPS NPDES Renewal Application, MA Antidegradation Provisions Summary:

- Boron is a naturally occurring inorganic element found combined with other elements throughout the environment. It is released into the environment through weathering processes and from industrial discharges for domestic products including fiberglass, detergents, cosmetics, medicine and fertilizers.

- Boron has been detected in most (98%) surface water sampled in the U.S. Concentrations range from 0.001 to 5 mg/L and vary greatly depending upon geologic conditions. In the New England states, levels for 91 samples ranged from 0.006 to 0.160 mg/L, with a mean value of 0.082 mg/L.

- Boron is an essential nutrient for plants and is assimilated by plants from soil. Ingestion of boron in food (primarily fruits and vegetables) and water is the most frequent route of human exposure. Estimates of average daily boron ingestion by humans range from 10 to 25 milligrams (mg). Boron is completely absorbed by the human body upon ingestion, but does not accumulate in body tissue.

- Boron is an essential nutrient of plant growth, but can be toxic at high levels. However, there is much more literature on boron deficiency as the more serious problem. The sensitive crops have a boron threshold tolerance concentration range of 0.3 to 5.0 mg/L, while the most tolerant crops have a tolerance range of 4.0 to 15 mg/L. The prime concern over the toxic effects of boron centers on the possibility that irrigation waters containing increasing levels of boron will cause problems of boron toxicity for higher plants, but this may be of most concern in arid regions where irrigation is widely practiced.

- Toxicity testing on fathead minnow egg-fry indicated a 30-day Lowest Observed Effect Concentration (LOEC) (reduction of growth) of 24 mg/L of boron and a 60-day LOEC (reduction of fry survival) of 88 mg/L of boron. Toxicity tests with large mouth bass indicated a LOEC of about 12 mg/L of boron. Studies have found that amphibians respond to boron at concentrations similar to those for fish, requiring an exposure concentration of 9.6 mg/L of boron over an extended period of time for detectable effects to occur. Further, rainbow trout embryo growth appears to be stimulated by the addition of boron in low concentrations.

- No Observed Effect Concentration (NOEC) and LOEC values using *Daphnia magna* (water fleas) were found in toxicity testing at concentrations of about 6 and 13 mg/L of boron. In the wild, healthy rainbow trout have been found in surface waters containing up to 13 mg/L of boron.

The only state to have an ambient surface water quality criteria for boron is Michigan. The Michigan ambient criteria for boron is 1.9 mg/l for waters used as for drinking water supply and 160 mg/l for other fresh waters. There are no public water supply intakes on the Deerfield River. Based on information provided in the permit application, the calculated in-stream boron concentration of 0.33 mg/l (see calculations on next page) is 83 % lower than the Michigan Criteria.

EPA has made a BPJ determination under the authority granted in Section 401(a)(1) of the Clean Water Act (CWA) and 40 CFR §125.3, that the purification system consisting of a demineralizer unit and a polishing filter, as well as the controlled flow rate, represent BAT for Total Boron for the YNPS.

Outfall 001 (B)Limits

Flow

Flow monitoring is required for all discharges based on the provisions found at 40 CFR §122.44(i)(1)(ii). The flow limit of 14,400 gallons per day or 10 gallons per minute, insures that the ambient boron concentration shall remain below 0.33 mg/l (see calculations on next page).

Total Boron

The draft permit limits the effluent concentration of total boron to 850 mg/l as stated in the NPDES reapplication. Information presented in the Antidegredation document provided with the reapplication identifies the lack of toxicity for this boron discharge. The permittee may not add additional boron to the make-up or rinse waters. The total load to the Deerfield River is expected to be approximately 1028 lbs, as calculated below

(total flow)(conversion factor)(boron concentration) = Estimated Load to River

(0.145 MG)(8.34)(850 mg/l) = 1028 lbs total

As currently permitted by the U.S. EPA and MA DEP, Outfall 001 discharges into Sherman Reservoir within 100 feet of the intake to Sherman Station. The proposed discharge of the Spent Fuel Pool and associated rinse water to the Deerfield River is based upon the following data:

Auxiliary Service Water (ASW):	80 GPM (115,200 GPD)
Spent Fuel Pool (SFP):	10 GPM (14,400 GPD)
SFP boron concentration:	850 mg/L

The in-stream concentration of boron is a function of the SFP discharge, ASW flow, and river flow rates. The assumed dilution ratio of the ASW and SFP flow rates will be a conservative 9:1 at 90 GPM (80 GPM + 10 GPM). The ASW flow is currently averaging 100 GPM. By using the PG&E minimum regulated stream flow at No. 5 Dam, just downstream from YNPS, a conservative river dilution ratio can be established. Dividing the minimum river flow of 57 cfs (36.8 MGD), as established by the FERC license (Reference 4), by the combined ASW and SFP plant flow of 0.130 MGD, gives a river dilution ratio of 284:1. Combining the ASW and river dilution ratios yields a total dilution ratio of 2,556:1, which in turn gives an estimated in-stream boron concentration of 0.33 mg/L.

pH Range

The current pH range of the Spent Fuel Pool is 5.1 to 5.5 Standard Units (SU). pH shall be sampled once per “batch”, or at the commencement or resumption of discharge. The permittee has stated that the discharge rate will be no greater than 14, 400 GPD. The discharge rate will be adjusted to ensure that the pH as measured for Outfall 001A (ASW) will be met. Individual discharges to complete the release may be spaced apart over a period of approximately one month or longer. The draft permit pH limitations are required by State Water Quality Standards found at CMR 4.05(b)(3).

Outfall 001 Availability

As decommissioning progresses, there will be a time within the next 1-2 years, when the Auxiliary Service Water System (ASW) will no longer be available due to building demolition and dismantling activities. As such, discharge to Outfall 001 for water treatment effluents, such as the on-site evaporator, could not take place. Therefore, another discharge pathway will be needed. Under the present plant configuration, the only discharge path potentially available would be the storm water drainage system (Outfalls 003 and 004). The discharge shall be required to meet the Outfall 001 NPDES physical and chemical regulatory limits, as well as the NRC radiological requirements. Both include sampling and monitoring of the effluents prior to discharge. Use would be intermittent and only performed when needed. The discharge flow rate will depend on temporary pump capacity, but is expected to be between 10 – 20 GPM. The permittee is required to notify EPA/DEP with the monthly Discharge Monitoring Reports when Outfall 001 is not available and discharges are to be redirected through Outfall 003 and/or Outfall 004.

OUTFALL 002

This outfall has been permanently isolated and the systems leading to the outfall removed.

STORM WATER OUTFALLS: 003, 004 & 005 (Proposed)

The two independent storm water point source discharges, Outfall 003 and Outfall 004, remain in place. Each is part of a network of storm drains connected to parking areas and associated facility, as well as employee and administrative buildings.

The northeast collection system discharges via Outfall 003 into Sherman Reservoir, near Outfall 001. A portion of the northeast storm water flows overland and is directed to a cut in the curbing that discharges as a point source (proposed as Outfall 005) adjacent to Outfall 003. The northwest collection system, which also includes routine groundwater infiltration, discharges via Outfall 004 adjacent to Outfall 002 into an unnamed drainage swale that connects to the Deerfield River downstream of Sherman Dam. Storm water also infiltrates through pervious surfaces or flows overland to the environment.

Neither network is directly connected to any plant operation. Raw material storage areas and decommissioning activities conducted in areas that may affect the quality of storm water are controlled through a Storm Water Pollution Prevention Plan and related procedures.

In 2000, a concrete storage pad was constructed at the southern end of the industrial area. Storm water runoff from the concrete storage pad is directed to the northwest storm drain network, which discharges to Outfall 004.

The estimated flow to Outfall 003 and 004 during the two-year, 24-hour rainfall event is 0.2 MGD and 0.7 MGD, respectively. Biennially, the Fire Water Tank containing 350,000-gallons of non-chlorinated water withdrawn from Sherman Reservoir is discharged to either Outfall 003 or 004 to accommodate a required inspection of the tank interior. Water is also periodically discharged from the tank to the storm drain system to test fire hoses and associated equipment.
Yankee evaluated the YNPS site and associated property in 1993 using aerial photographs, an up-to-date topographical map of the facility, an extensive ground survey, and a review of applicable piping schematics. These information sources, in addition to information relating to the construction of the Independent Spent Fuel Storage Installation (ISFSI) in 2000, were used to identify primary drainage areas that have a point source discharge to the environment off site.

Seven drainage areas have been identified. The fenced in areas surrounding the plant, referred to as storm water management areas, contain drainage ditches, catch basins and culverts, paved areas, facility buildings, outdoor materials storage areas, materials loading and access areas, and surface water bodies.

Outside of the fenced area, precipitation falls on natural vegetation and either infiltrates into the soils or travels overland in conformance with local topography. Overland flow and intercepted ground water originating from south of the plant site are collected within a drainage swale outside the plant site and directed eastward to Wheeler Brook.

A description of each Storm Water Management Area from the reapplication materials follows:

<u>Management Area 1</u> is associated with the northern and western portion of the plant site. It has paved areas, buildings, and four grassed areas. The area is 195,554 ft^2 of which about 30,000 ft^2 is vegetated. Major structures in the area include the Waste Disposal Building, PCA Warehouse, and portions of the Vapor Container and Primary Auxiliary Building, Turbine Building, and Service Building. The plant transformers, which during plant operation were located in this area, have been removed and shipped off site for disposal. In general, material storage is inside buildings, with covered soil stockpiles and C-vans outside.

Storm water collected from paved areas and roof drains flows through numerous catch basins and culverts to Outfall 004. There is also minor sheet flow from the road north of the Turbine Building to the adjacent environment through a grassed swale.

<u>Management Area 2</u> is associated with the southeastern portion of the plant site. It is mostly paved with one grassy area. The area is 76,935 ft^2 of which about 20,000 ft^2 is pervious surface. Structures in the area include the remaining portions of the buildings in Management Area 1, the Fuel Storage Building, evaporator wastewater tanks, two 4,000-gallon test tanks, and covered soil and asphalt stockpiles.

The area also includes a drain connected to a bermed area that previously contained an above ground fuel-oil storage tank. The drain is controlled by plant procedures for the drainage of rainwater under the Spill Prevention Control and Countermeasure (SPCC) Plan. Storm water collected throughout the area flows through catch basins to permit Outfall 003.

<u>Management Area 3</u> is associated with the eastern most portion of the plant site. The entire 43,513 ft^2 area is paved except for about 3,000 ft^2 of pervious surface. The area includes the site warehouse, which stores hazardous wastes and flammable products in cabinets that are controlled by plant procedures under the SPCC Plan. The area also has two 1,000-gallon propane storage tanks and decommissioning lay down area.

Storm water from the paved areas and roof drains flows overland toward the north and east to curbing. A portion of the storm water is discharged through a cut in the curbing (proposed as Outfall 005) and discharges as a point source adjacent to Outfall 003.

<u>Management Area 4</u> is associated with the parking area outside and northwest of the plant site. In addition, vehicles delivering materials and goods to the warehouses inside the plant area in Management Area 1 are temporarily held at the security gate in Management Area 4 prior to entering into Management Area 1. The entire 47,840 ft^2 area is paved and includes a number of temporary officer trailers. The portion of storm water flows overland to a drainage ditch that carries effluent to Outfall 004. The remainder is carried overland as sheet flow.

<u>Management Area 5</u> is associated with an area outside and southwest of the plant site. It is partially paved (15,500 ft^2), including a road and parking area, but is mostly pervious dirt and gravel (46,775 ft^2). The area includes the Administrative Office complex on the elevated, eastern portion. The lower, western portion is a lay-down area with a solid waste trash compactor, a sand/salt shed, and excavated soil storage that has been stabilized through hydro-seeding. All storm water sheet-flows overland.

<u>Management Area 6</u> is associated with a parking lot outside and north of the plant site. C-vans as well as uncovered wood and scrap metal dumpsters are parked adjacent to the parking lot. The entire 10,211 ft^2 lot is paved. Storm water flows through two catch basins to the drainage swale below Outfall 004.

<u>Management Area 7</u> is associated with the southern portion of the plant site. The area is 78,764 ft^2 of which about 7,000 ft^2 is natural vegetation as grass and wetlands. The area includes the ISFSI pad and associated paved surfaces and access road.

Surface runoff south and west of paved areas is intercepted via an outer perimeter ditch that discharges into the existing Management Area 1 storm drain system via catch basins. The ditch also collects upgradient subsurface flow draining from an infiltration trench located along the south edge of the pavement. Surface runoff east of paved areas also is intercepted via an outer perimeter ditch and conveyed to a wetland on the northern portion of the management area, which in turn connects to the existing Management Area 1 storm drain system via a culvert.

This management area also receives drainage from a vegetated soil storage area located outside and southeast of the site, as well as from naturally vegetated areas to the south and west. Storm water from the soil storage, which has been stabilized through hydro-seeding, generally flows overland as sheet flow, but a portion flows toward Management Area 7 due to topography.

Storm Water Outfall Limits

The current permit requires twice per year sampling of storm water during the months of April and September. The twice per year sampling frequency shall be carried forward in the draft permit, with the sampling period being 1/6 months. The current permit requires sampling for oil and grease, TSS, and pH. The draft permit adds a flow estimation requirement for each storm event sampled.

Total Flow

The total flow volume estimation for the rain event may be calculated utilizing local rain gage data in conjunction with a surface area formula. Flow monitoring is required for all discharges based on the provisions found in 40 CFR §122.44(i)(1)(ii).

Total Suspended Solids (TSS)

Total suspended solids are limited in the draft permit to a daily maximum concentration of 100 mg/l. The Multi-Sector General Permit for Industrial Activities (Federal Register/ Vol. 65 No. 210/Monday, October 30, 2000/pages 64766-7) includes a benchmark concentration of 100 mg/l for TSS. The general permit fact sheet states: *The benchmarks are also viewed by EPA as a level that, if below, a facility presents little potential for water quality concern.* The General Permit shall be used as guidance for establishing TSS limits based on Best Professional Judgement (BPJ) under the authority granted in Section 401(a)(1) of the Clean Water Act (CWA) and 40 CFR §125.3.

pH

The pH range is shall be monitored as required by the State Water Quality Standards as stated above. pH shall be sampled twice each year.

Storm Water Pollution Prevention Plan (SWPPP)

Pursuant to Section 304(e) of the ACT and 40 C.F.R. §125.103(b), Best Management Practices (BMP) may be expressly incorporated into a permit on a case-by-case basis where necessary to carry out Section 402(a)(1) of the ACT. This facility engages in activities which could result in the discharge of pollutants to waters of the United States either directly or indirectly through storm water runoff. These operations include the following from which there is or could be site runoff: material storage, in-facility transfer, material processing, material handling, or loading and unloading.

The permit requires this facility to maintain and update a SWPPP as needed. The SWPPP will include Best Management Practices appropriate for this specific facility to control storm water discharges from these and other activities which could contribute pollutants to waters of the United States.

Yankee revised the existing SWPPP in January of 2003. The Storm Water Pollution Prevention Plan, Yankee Document No. 2DD-4 (Dated January, 2003), as revised, and the Storm Water Pollution Prevention Inventory, Evaluation and Inspection procedures, Yankee Document No. DP-9748 (Dated January, 2003), as revised, are incorporated into the permit conditions by reference. The requirement to keep both documents current and implement the procedures contained therein, are fully enforceable conditions of the permit.

The goal of the SWPPP is to eliminate or reduce the potential for the discharge of pollutants through the storm water system. In the event the potential cannot be eliminated, the permittee has and shall continue to select BMPs to reduce, to the maximum extent possible, the pollutant loading to the receiving water. The SWPPP requirements direct the permittee to review the physical equipment, the operational procedures, and the operator training at the facility. The objective of this review is to protect waters of the United States by eliminating or minimizing the potential discharge of any pollutants.

The SWPPP requirements in the draft permit are intended to promote a process whereby the permittee on an ongoing basses evaluates potential pollution sources at the facility, and following that, selects and implements appropriate measures necessary to prevent or control the discharge of those potential pollutants in storm water runoff.

This process involves the following four main steps: (1) forming a team of qualified facility personnel who will be responsible for preparing the SWPPP and assisting the plant manager in its implementation; (2) assessing the potential storm water pollution sources; (3) selecting and implementing appropriate management practices and controls for these potential pollution sources; and (4) evaluating, periodically, the effectiveness of the SWPPP in preventing storm water contamination and in complying with the various terms and conditions of the draft permit.

EPA has developed multi-sector general permits for the Steam Electric Power Generating Point Source Category. The Yankee SWPPP mirrors the general permit in all significant areas. The permittee shall be required to keep the plan current and implement the SWPPP.

Polychlorinated Biphenyls (PCBs)

PCBs were found in paint used on some of the structures at the facility. Yankee completed a Phase II Site Investigation under the Massachusetts Contingency Plan (MCP), 310 CMR 40, administered by DEP Bureau of Waste Site Cleanup. The investigation includes sampling of soil, sediment, surface water, groundwater, and fish. Yankee sampled for PCBs as part of the NPDES re-application process (specifically Aroclor-1254) because of their historic use in paint on site and the release of PCB-containing paint chips to the storm water catch basins. Sampling for PCBs conducted within the NPDES replication process found no detectable PCBs in the storm water. The draft permit does not contain redundant PCB storm water monitoring requirements as they are being addressed comprehensively under the MCP.

OUTFALL 006 New

Screenwell House Sump: During high reservoir and rainwater conditions, a sump in the intake Screenwell House adjacent to Sherman Reservoir collects water in-leakage to prevent flooding of electrical pumps and motors in the lower level of this building. A high-level float actuates the sump, which discharges directly to Sherman Reservoir. The average discharge flow is 30 GPD. If inflow is too great for the sump to handle, which occurs occasionally during high river flows, an eductor is manually started to assist in removing water. The eductor also discharges directly to Sherman Reservoir. The draft permit requires inspection of the sump well floor and maintenance to insure that floor is kept clean. Through pollution prevention there should be no source of pollutants introduced to the sump water discharge.

Total Flow

Flow monitoring is required for all discharges based on the provisions found in 40 CFR §122.44(i)(1)(ii).

pH

The pH range is shall be monitored as required by the State Water Quality Standards as stated above. pH shall be sampled twice each year.

OUTFALL 010

This outfall has been permanently isolated. The original source of effluent, the Service Water System, (SWS), has been decommissioned and most of its components dismantled.

MISCELLANEOUS

Demineralizer Unit: A vendor-supplied, portable demineralizer unit now generates demineralized water, formerly produced by the Water Treatment System. Effluent from the portable unit is filtered and discharged to the storm water system instead of Outfall 002.

The effluent, which is composed of make up water from Sherman Reservoir or demineralized rinse water, is intermittent with a maximum flow of 4,000 GPD over a two-day period following the generation of demineralized water. This is only expected to occur once more during decommissioning.

Construction Dewatering: The dismantling of buildings and related structures, including foundation excavation, will likely result in areas that fill with either ground water or storm water. The water-filled excavations, in many cases, must be dewatered to complete the dismantling activity. Dewatering will be intermittent and only performed when needed. The dewatering flow rate will depend on pump capacity. This discharge will be directed to either Outfall 003 or 004 and controlled using best management practices common to construction dewatering activities and regulatory requirements.

Since dewatering effluent may contain low levels of radionuclides, the permittee must comply with the requirements set by the U. S. Regulatory Commission (NRC) under 10 CFR Part 50 and as defined in the YNPS's technical specifications..

V. Monitoring Frequency

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA as required by 40 CFR 122.41 (j), 122.41 (j)(4), (5), 122.44 and 122.48.

VI. Antibacksliding

Anti-backsliding as defined at 40 CFR §122.44(l)(1) requires reissued permits to contain limitations as stringent or more stringent than those of the previous permit unless the circumstances allow application of one of the defined exceptions to this regulation. Anti-backsliding does not apply to these limits because material and substantial additions and alterations to the permitted facility occurred after the original permit issuance which justify the reevaluation of the current limitations, as defined at 40 CFR § 122.44(l)(2)(i)(A).

VII. Antidegradation

The Massachusetts Antidegradation Policy is found at Title 314 CMR 4.04. All existing uses of the Deerfield River must be protected. The EPA anticipates that the DEP shall make a determination that there shall be no significant adverse impacts to the receiving waters and no loss of existing uses as a result of the reissuance of this permit. The public is invited to participate in the anti-degradation finding through the permit public notice process.

The remaining general and special conditions of the permit are based on the NPDES regulations, 40 CFR Parts 122 through 125, and consist primarily of management requirements common to all permits.

VIII. State Certification Requirements.

EPA may not issue a permit in the Commonwealth of Massachusetts unless the Massachusetts Department of Environmental Protection (MA DEP) certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the MA DEP has reviewed the draft permit. EPA has requested permit certification by the state pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

IX. Comment Period and Procedures for Final Decisions.

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for the arguments in full by the close of the public comment period, to Douglas M. Corb at the U.S. EPA, Massachusetts Office of Ecosystem Protection (CPE), One Congress Street - Suite 1100 - CPE, Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

In accordance with the provisions of the Massachusetts Administrative Procedures Act, the Department’s Rules for the Conduct of Adjudicatory Proceedings, and the Timely Action Schedule and Fee Provisions, a similar request for an adjudicatory hearing should also be sent within thirty days to:

Docket Clerk
Office of Administrative Appeals
Department of Environmental Protection
One Winter Street, Third Floor
Boston, MA 02108

In addition, a valid check payable to the Commonwealth of Massachusetts in the amount of $100 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The hearing request to the Commonwealth will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver.

The filing fee is not required if the appellant is a city, town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee for a permittee who shows that paying the fee will create an undue financial hardship. A permittee seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

X. EPA Contact.

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Douglas M. Corb
U.S. Environmental Protection Agency
Office of Ecosystem Protection
One Congress Street
Suite-1100 - CPE
Boston, MA 02114-2023
Telephone: (617) 918-1565
Facsimile: (617) 918-0565
e-mail: corb.doug@epa.gov

May 28, 2003	Linda Murphy, Director*
Date	Office of Ecosystem Protection
	U.S. Environmental Protection Agency

*Please address comments to Douglas Corb at the address provided.

Attachment A
INSERT PAGE 5 of 6 from
Application Additional Information
Water Use During Decommissioning

Attachment B
INSERT PAGE 6 of 6 from
Application Additional Information
Location Map

Attachment C
May be found in another file
Yankee-DMR.Data

FACT SHEET ATTACHMENT D

PERMITTED OUTFALLS - CURRENT PERMIT			
OUTFALL	**OPERATION**	**AVE. FLOW**	**TREATMENT**
001	Condenser Cooling Water	226.2 MGD	Non-Contact Cooling
010	Service Water Turbine Lubricating Oil Cooling Water Generator Hydrogen Cooling Water Primary Plant Effluent	5.4 MGD (Total) 0.6 MGD 0.4 MGD 4.4 MGD	
002	Water Treatment Plant Effluent Tranformer Oil Cooling Water Secondary Plant Floor Drains Water Treatment PLant	0.9 MGD (total) 0.6 MGD 0.1 MGD 0.2 MGD	
003	Storm Water Run-off (North Side)	Monitor Only	
004	Storm Water Run-off (South Side)	Monitor Only	

PERMITTED OUTFALLS - DRAFT PERMIT			
OUTFALL	**OPERATION**	**FLOW**	**TREATMENT**
001	ASW* Cooling Test Tank Effluent (Evaporator Disitilate) Spent Fuel Pool Water	0.2 MGD 0.01 MGD 0.185 MG	Non-Contact Cooling Distillation Micro-straining, ion exchange
002	**DISCONTINUED**		
010	**DISCONTINUED**		
003	Storm Water Runoff Northeast Drainage Area Construction Dewatering Demineralizer Effluent	0.2 MGD (2 yr/2-4hr event) TBD** 0.004 MGD***	N/A Settling
004	Storm Water Runoff Northwest Drainage Area Construction Dewatering	0.7 MGD (2 yr/2-4hr event) TBD**	N/A Settling
005 (NEW)	New Storm Water Cut through Portion of Northeast Drainage Area	Flow from 003	N/A
006 (NEW)	Screen well sump	30 GPD	BMPs

* Auxiliary Water Service for spent fuel pool heat exchanger and dilution water for test tank effluent

** To be determined

*** The demineralizer effluent (~4,000 gallons) may be released one time from either Outfall 003, 004, or 005, consistent with the SWPP Plan, at the discretion of the permittee