

**BRIEF HISTORY OF THE RETS**  
**[RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS]**

**13<sup>th</sup> Annual RETS-REMP Meeting**

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**Capturing 12<sup>th</sup> Annual RETS-REMP PRESENTATIONS**  
**BRIEF HISTORY OF THE REMP**

**1946-1962 The Formative Years of Nuclear Regulation**

- 1946**      **The Atomic Energy Act. The 1946 law did not allow for private, commercial application of atomic energy. To manage the nation's atomic energy programs, the act established the five-member Atomic Energy Commission (AEC)**
- 1954**      **The 1954 Atomic Energy Act redefined the atomic energy program (allowed private commercial nuclear industry) Shippingport nuclear power, PA, Peach Bottom Unit 1**
- 1958**      **Yankee Nuclear, construction started**
- 1960**      **Yankee Nuclear, Rowe, Initial Critical    485 Thermal MWt, (Westinghouse)**
- 1961**      **Yankee Rowe, Commercial Operation**
- 1963**      **Upgraded to 600 Thermal MWt**
- 1992**      **Permanent Shutdown**

**1963-1975 The Nuclear Power Debate**

- 1963:**      **“Turnkey” by GE for Oyster Creek,    515 electric MegaWatt, \$66 million**
- 1969:**      **Commercial Operation**  
**Dec. 1969:**    **Congress passed the National Environmental Policy Act (NEPA).**

**Jan. 1970:** President Nixon signed NEPA (now required federal agencies to consider the environmental impact of their activities)

**July 1971:** AEC decision for the Calvert Cliffs nuclear power plant was defeated by the NEPA.

**Jan 1974:** Licensee

**May 1975:** Commercial Operations Unit 1

**Apr. 1977:** Commercial Operations Units 2

**1974** **Established a New Agency, called Nuclear Regulatory Commission (NRC)**

**Jan. 1975** **NRC began its operations as a separation agency**

**1971-1980** **REMP, The Best Era**

**Effect of Low-Level Radiation**

**Environmental Statement/Study for constructions**

**National Wildlife *Magazine* (Dead Birds at Beaver Valley Unit-1/2 Cooling Tower)**

**Tidal Wave Study (dispersion study)**

**Atmospheric Dispersion Study**

**Aerial Measurement (EG&G)**

**Non-Radiological Environmental Monitoring**

- **Thermal Pollution (fish kill issues at Big Rock Point and Oyster Creek sites)**

- **Chemical Pollution : Yellow Creek Decision, Non-radiological monitoring requirements were removed from the Technical Specification (NRC) and moved to the EPA (NPDES, Annual Non- Radiological Environmental Report).**

**Radiological Environmental Monitoring (including benthos, pine needles, etc.)**

**Analytical Measurements for REMP Samples:**

**Gamma (NaI and GeLi); Gross  $\alpha/\beta$ ; H-3 analysis in water and in fish flesh (water and organic bounding tritium analyses); Sr-89/90; P-32; Fe-55; Ni-63; C-14; Ca-45; I-131 in charcoal cartridge (homogenous/face loaded geometry); and Ambient Radiation (Film, TLD, ion chamber)**

## **BRIEF HISTORY OF THE RETS**

**1974      Established a New Agency, called Nuclear Regulatory Commission (NRC)**

**June 1974:      RG 1.21, Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants**

**Jan. 1975      NRC began its operations as a separation agency**

**March 1976:      RG 1.110, Cost-Benefit Analysis for Radwaste Systems for Light-Water-Cooled Nuclear Power Reactors**

- April 1976:** RG 1.112, Calculation of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Light-Water-Cooled Power Reactors
- April 1977:** NUREG-0016, Calculation of Releases of Radioactive materials in Gaseous and Liquid Effluents from BWR (BWR-Gale Code)
- April 1977:** NUREG-0017, Calculation of Releases of Radioactive materials in Gaseous and Liquid Effluents from PWR (PWR-Gale Code)
- April 1977:** RG 1.113, Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appen. I
- July 1977:** RG 1.111, Methods of Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors
- Sept. 1977:** NUREG-0324, XOQDOQ, Programs for the Meteorological Evaluation of Routine Effluent Releases at Nuclear Power Stations
- October 1977:** RG 1.109, Calculation of Annual Doses to man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10CFR50, Appendix I
- Dec. 1977:** RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation)- Effluents and the Environment.
- Oct. 1978:** NUREG-0472, Draft Radiological Effluent Technical Specifications for PWR's

- Oct. 1978:** NUREG-0473, Draft Radiological Effluent Technical Specifications for BWR's
- Oct. 1978:** NUREG-0133, Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants, A Guidance Manual for Users of Standard Technical Specifications
- 1981-1984:** Implementation of RETS & REMP (NRC/Franklin Institute)
- Jan. 31, 1989:** Generic Letter 89-01, Implementation of Programmatic Controls for Radiological Effluent Technical Specifications in the Administrative Controls Section of the Technical Specifications and the Relocation of Procedural Details of RETS to the Offsite Dose Calculation Manual or to the Process Control Program.
- June 1990:** BRC (Below Regulatory Concern) issued by NRC but rested.
- Nov. 14, 1990:** Generic Letter 89-01, Supplement No. 1, ODCM Guidance: Standard Radiological Effluent controls for Pressurized Water Reactors
- April 1991:** NUREG-1301, ODCM Guidance: Standard Radiological Effluent Controls for PWR (GL 89-01 Supplement No. 1)
- April 1991:** NUREG-1302, ODCM Guidance: Standard Radiological Effluent Controls for BWR (GL 89-01 Supplement No. 1)
- 1991-1994(5):** NRC's PC-DOSE Inspections.

**1999-2000: Reactor Oversight Process (ROP)**

**Mar. 2000    ROP    Complete the Pilot Program**  
**April 2000    ROP-1    Implementation of the ROP-1**

**2001-?    Biennial RETS Inspection**