RETS-REMP Implementation for Multi-Unit Sites

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Purpose

- Why is combined RETS/REMP difficult?
- Identify current challenges
- Are differences really “different”?
- Fabricate an Action Plan to resolve issues

A Brief History of Indian Point

- Oct 8, 1954 - Con Ed purchases 260-acre former Indian Point amusement park in Buchanan, NY
- Sep 16, 1962 - The reactor that would become known as Indian Point 1 begins generating power.
- Dec 10, 1962 - Con Ed applies for permit to build reactor in Ravenswood, Queens –denied
- Nov 23, 1965 - Con Ed's directors approve plans to build a second nuclear reactor at Indian Point.
- Apr 12, 1967 - Con Ed applies for permission to build a 3rd nuc plant at Indian Point -granted.
- Jun 30, 1970 – IP#1 S/D due to defects in stainless steel reactor coolant piping and cost to repair.
- Jun 26, 1973 – IP#2 commences low power testing but finds buckling and bulging of VC dome liner.
- Oct 12, 1974 – Unit 2 goes to 100% power, but has financial difficulty due to VC liner problems.
  Con Ed sells Unit 3 (under construction) to the State of NY (PASNY), final in Dec '75.
  Simultaneously, IP#1 is permanently S/D, lacking any emergency cooling system.
- Aug. 30, 1976 - Indian Point 3 goes into operation.
- Feb. 27, 1980 - Con Edison retires Indian Point 1 permanently, but not fully decommissioned.
- Nov, 2000 – ENTERGY purchases unit 3, followed by units 1 & 2 in 2002, site consolidation begins.

Philosophies of Operation

- Prior to consolidation:
  - Not just two *units* on one site, but two different *utilities*.
  - Shared resources occasionally, but NOT the norm.
  - Norm, in fact, was to be totally independent, including support systems like DI Water, Fuel Oil, Warehouse, etc.
  - REMP was administered by Con Ed, with PASNY having only a few experts help with the site report.
  - RETS were *completely* separate, requiring "Memos of Understanding" to comply with loosely scripted 10CFR20 concerns like airborne monitor setpoints and liq dilution.
- After consolidation: Forget All That !

Action Plan Needed

- Too many tentacles to wing it!
- Resolve completely different methods of doing the same thing.
- Decide which way for IPEC.
- Establish schedule with milestones.
- Track Progress.

Expected Impact on Existing Station Programs & Documents

- REMP station procedures
- ODCM implementing station procedures
- Site-specific and vendor ODCM software
- Map locations, history, validity
- Changes affecting RG 1.21 reports/history
- 50.75G and readiness for MARSSIM

Methodologies to Resolve

- Finite Cloud (unit 3) vs Semi-Infinite (unit 2)
- Mixed mode release points vs elevated & ground
- True Annual Average X/Q, or use actual qrtly data?
- Sectors of worse met conditions do not match
- Distances to site boundary slightly different
- Dose pathways not consistent (cow milk at unit 2)
- Application of 10CFR20 limits to be clarified
- Liquid dilution volume: unit specific or share total?
- Distances to REMP locations from a common point?

Finite / Semi-Infinite Cloud

- Both units justify different methods – quoting the same source (Entech's Aoulus 3 code)
- Which is right? Both? Which is *better*?
- If both are justified, final decision should be determined by impact/cost on other programs
- Plan: Enlist aid of industry experts, vendors, and Corporate Office, make decision for IPEC

Elevated/Ground/Mixed Mode

- No real elevated releases at IPEC
- Superheater stack used for unit 1 only
- Definitions/Selection of ground level release points need to be clearly identified.
- Others will probably fall under an adopted “mixed mode” definition, per the existing unit 3 ODCM, pending approval.

Annual Average/Quarterly Met Data

- Political advantage to using current met data
  - Weigh admin costs of quarterly updates with using annual average data on a per-release basis, ensuring “annual average” is updated periodically.
- Greatly effects software application, time and $$$.
- Assuming true annual average, how often to update? Periodicity should be a Corporate standard.
- Full land use census at same periodicity as the updated X/Q? Again, a Corporate standard.
- OK, who OWNS the MET program, anyway?

Issues with Multiple Release Points

- Locations for worst case met at the site boundary, nearest resident, etc, slightly different due to different starting points.
- All need re-evaluation for consistency.
- Default terms assumed in offsite dose modeling add more variability than that which could be attributed to the use of a single release point.
- Industry poll suggests that one release point is best for multi-unit sites.
- Greatly simplifies the REMP issues.

Inconsistent Dose Pathways

- Enabling pathways is a product of defendable land use census data.
- If no cow, then pathway should NOT be enabled.
- Same for potable water, and shoreline deposit.
- Corporate decision if needed and make common.
- Eliminate notion of “conservative” inclusion.

Gaseous 10 CFR 20 issues

- Simplify and include enough direction in ODCM(s) to eliminate “memorandums of understanding”, deferring to station procedures.
- Coordinate updating many station procedures.
- Coordinate with System Engineer for RMS.
- Use consistent methodologies
  - Separate fractions of the total limit (500 mrem/yr) were adopted because managing the shared limit was difficult.
  - It should be easier now… do we continue with separate fractions, or manage one site limit?
  - Inclusion of a “safety factor” for RMS gaseous setpoints.

Liquid Effluents

- Site dilution, or concurrent dilution, specific to each unit, for each release?
  - Average 10CFR50 doses over quarter, using ALL dilution?
- SPDES limits, like Boron, can now be more easily managed without the “MOU”.
- Old and New 10CFR20 (unit 3 = new, unit 2=old).
  - ITS and Gen Letter 89-01 being submitted at Unit 2 this year, but no plans for new 10CFR20.
  - Previously, it was not cost effective to adopt the new code at unit 2. Since $$$ need to be spent anyway, this is the time.
  - Updating software was not difficult at unit 3, after defining “MPCW” as new 10CFR20 “EC*10” in ODCM (RECS).

Already in Progress

- Both sites use one Environmental Lab
- Both using one Effluent Lab (Part 50)
- Holding quarterly REMP meetings
- Good Corporate involvement
- Consolidated REMP and RETS managers
- Combined self-assessments (ODCM in 2002)
- Purchasing one RETS software package

Conclusion

- Write Action Plan.
- Get opinions on different methodologies, but cannot be indecisive for long.
- Make decision, target dates.
- Prepare subordinate documents, procedures for effective dates when ODCM is ready.
- Target 2004: One site, one ODCM, one effluents program, one REMP, one annual effluent report. (Annual REMP report already consolidated.)