1345 08/19/91

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Request for Additional Information
Application Dated November 22, 1989
Combustion Engineering, Inc.
Docket No. 70-36

Comments: commitment:

1. Page 5-1, Section 5.1.2, Air and Gaseous Effluents states that "Lower limit of detection (LLD) shall be no more than 10 percent of 10 CFR 20, Appendix B, limits."

   a. Indicate which table from 10 CFR 20, Appendix B, is used Table II
   b. LLD should be lower. Regulatory Guide 4.16 recommends that LLD should be <5 percent of 10 CFR 20, Appendix B, Table II, values. (license - sup ok)
   c. Include action to be taken if LLD is not met. Document - how 5% limit is met validate samples - QA performance Section 3 -

2. Page 5-1, Section 5.1.2, Air and Gaseous Effluents - "The control limit for gross alpha activity in exhaust air effluent shall be 4×10^{-12} µCi/cc."

   a. The control limit should be lower than 4×10^{-12} µCi/cc. (Look at Demister - Incinerator stack)
   b. Include immediate action to be taken if control limit is exceeded. Investigation - not necessarily require immediate action

3. Page 5-1, Section 5.1.3, Liquid Effluents - "The lower limit of detection shall be no more than 10 percent of 10 CFR 20, Appendix B, limits."

   a. Indicate which table from 10 CFR 20, Appendix B, is used.
   b. LLD should be lower. Regulatory Guide 4.16 recommends that LLD should be ≤5 percent of 10 CFR 20, Appendix B, Table II, values.
   c. Include action to be taken if LLD is not met. → QA Designation - Background - slide counting.

4. Page 5-1, Section 5.1.3, Liquid Effluents - "The control limits for alpha and beta activity in liquid effluents shall be: (This is OK)

   Alpha - 3.0×10^{-5} µCi/ml 30 pCi
   Beta - 2.0×10^{-5} µCi/ml 20 pCi look in table for unidentified Beta

   a. The control limits for alpha and beta activity should be lower.
   b. Include immediate action to be taken if control limits are exceeded.

5. Page 5-2, Section 5.2, Environmental Monitoring

   a. Section should be rearranged. Interchange Paragraph 3 and paragraph 1. (clarity →)

   b. Revise last sentence to read "More frequent or additional samples shall be taken as necessary or for special studies and evaluations.

   c. Include requirement for environmental data to be submitted to the NRC every 2 years in support of the 10-year license.
   This may be general license requirement - ~~no action needed by licensee~~

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6. Page 5-3, Table 5-1, Environmental Monitoring Program Operational Effluents Monitoring Program

   a. Include criteria for requiring an isotopic analysis of an air effluent sample. none done – based on enrichment only.

Scrap usually 3-4% – to date maximum customer enrichment ~ 4.4% U-235

   b. Include sludge sampling in Table, "Operational Environmental Monitoring Program." Non routine sampling

   a. Include action levels – to be reviewed

   b. Include new ground water wells. 3N burial / burial + 3 EVAP ponds } 1-plant well α + β

[USE thin window counter 0.24 KeV–100K at Tc-99] ?40 pCi/l for Tc-99

7. Include a description of effluents and environmental monitoring program in Chapter 13. Relate sampling locations from Table 5-1 to data in tables in Chapter 13. Include map with all sampling locations.

Please describe

8. Page 13-1, Section 13.1, Airborne releases

2-stacks – soluble; HNO_3 wet Recovery – 1-stack sol slightly-sol

   Is the form of all uranium released in the gaseous effluents insoluble? What isotopes of uranium are present in the effluents? U-234/U-235 } 80% U-234 α activity

   Only on incoming UF_6 – isotopic make up present.

Please provide:

1. Environmental data for 1989 and 1990.

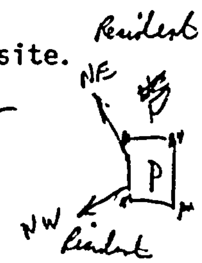
2. Isotopic breakdown of liquid and gaseous effluents released from site. Normally – not done

3. Lung dose for nearest resident for 1989 and 1990. Ratio for NRC data

   Suggest literature approach – computer [illegible] – code for dose estimate

4. Environmental fluoride data for 1989 and 1990.

5. Amount of HF released to environment during 1989 and 1990.



6. Method for calculating percent of MPC for environmental samples. [illegible] insoluble [illegible] for lung dose.

7. Meteorology of site for 1984 through 1990 (frequency of direction, speed). Strip chart data →

8. Current population estimates for area for 50 mile radius. → NEW commitment for 5 miles?

9. Reasons why control limits for liquid effluents for alpha are 3×10^{-5} µCi/ml and beta 2×10^{-5} µCi/ml while effluents discharged to Joachim Creek are limited to 3×10^{-6} µCi/ml per alpha and 2×10^{-6} µCi/ml beta. p 5-1.1 possibly

10. Seasonal high and low flows in Joachim Creek. → use existing data

11. New ground water monitoring wells were not included in the license renewal application. Provide locations of wells, collection and analysis frequency, and type of analysis performed. This should be included in Part I.

   [illegible] this data (Sept 1981 inspection). 100 gross α + β

   Below – drinking H_2O std.

mill site – decommissioning may be required for old site.

Licensee should commit to isotopic sampling if α std level is exceeded.

* Structural review by NMSS - <u>course of action</u> for handling {lime stone / ponds}

* Assume Homogeneity on liquid in soil in bottom of ponds. Instead of each liquid sample - <u>do core samples</u>.

appropriate Actn – take appropriate actn what are actn levels?

12. Action levels of gross alpha and gross beta for environmental samples. Actions to be taken when levels are met.
13. State or federal permit for gaseous releases.
14. Doses to demonstrate compliance with 40 CFR 190.10, 1984 through 1990.
15. Height of plant exhaust stacks and amount of time stacks are in use.
16. Verification of location of nearest resident (distance, sector).
17. Clarification of locations of NPDES outfalls.
18. Are stack effluent samples representative of waste streams?
~~19. Verification of population estimates for area.~~
20. Analysis of environmental and effluent data. Also, address the following questions from Chapter 13 data tables:

Table 13-1

1. Clarify data units
2. Why was there a decrease in stack monitoring alpha activity in 1983 and 1984 and then increases through 1988?
3. How are site boundary concentrations calculated?

Table 13-2

1. Clarify data units from table - ~~Is it 10~~ $^{-13}$ or 10^{-15}?
2. Why were there elevated results in 1985 and 1986?

Table 13-7

1. What nuclides are responsible for beta levels?
2. How deep is level of well water?

Table 13-8

1. Explain reasons for elevated alpha results for:
   - 1985 - Nov, Dec
   - 1986 - Jan, Oct, Nov, Dec
   - 1987 - Jan, Feb, Jun, Jul
   - 1988 - May
2. Explain reason for elevated May 1988 beta results:

Below: Detection Requirement - St Louis office - so indicated.

H 8'4"

maximum dilution

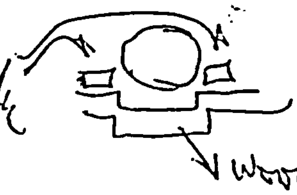
grd water

} a uniform average approach / don't seem to want to average these values.

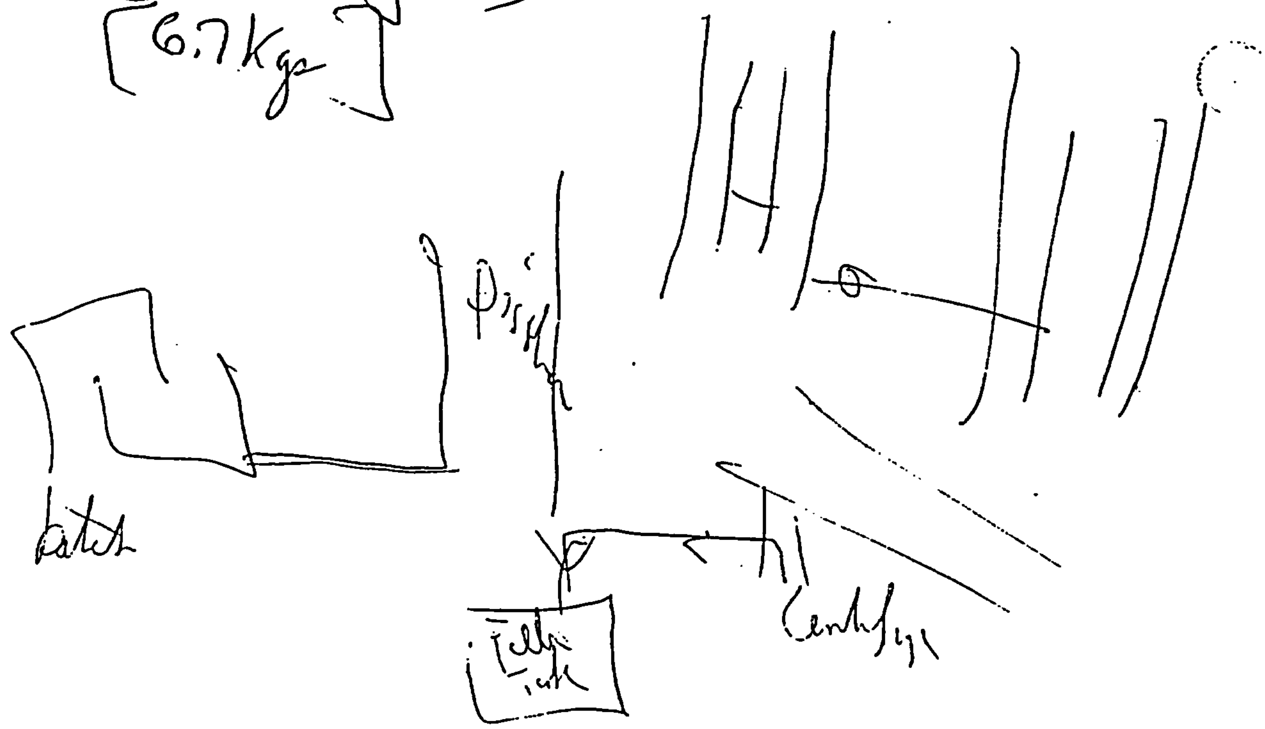
? [furnace Pump on old pellet line

? [What are large tank in cylinder Vape room] } Hydrostatic Test — run through boildown dust stage no process — no problem

[state of cradle - repaired w/ blocks



[13.4 Kgs]
[6.7 Kgs] →



[115 Worker [QI back-wash through sewage plant] may peak up to 175 people]

Table 13-11 Sewage Outfall

1. Identify source of alpha contamination. - Sinks - laundry - shower
2. Which nuclides are responsible for elevated readings?
3. Is sediment at outfall sampled and analyzed for radioactivity?

scheduled for large sewage plant - public permit, (aerated + bleach chlorinator)

Table 13-14

1. Why does the level of fluoride always drop for the month of July? Plant shutdown + inventory
2. What happened in 1988 to account for the increase in the amount of fluoride released? increase in heavy alloy washer - not performing well - NH_3F leaving the stack - affects emissions - F specific electrodes - Normally HF is possible by lime, but not NH_3F -

1989/90 - more efficient - new installation

new NH_3 washer

Table 13-16

Explain reasons for elevated fluoride levels for:
- 1983 4th quarter - Station 12, 14
- 1984 1st and 4th quarter - Station 14
- 1986 1st quarter - Station 13
- 1987 3rd quarter - Station 12

Sampling Technique

21. Do site activities affect flow in Joachim Creek? not much 3000 gal/day
22. Elevation of the site and buildings where special nuclear material is used. - drawing submitted
23. Provide annual Chi/Q for the site. Reference personnel data Wind pattern -
24. Identification of sources of liquid effluents and how discharged.

Sewage - State ~~All~~ Application
laundry -
showers - NPDES
toilet sinks -

100 yr Flood - Red = recycle recover; Green = incinerator; Blue - 1 ct/min

235	Po	PL
3.6	32	30
3.8	28	27

NRC Unchallenged Position

1 BRC on Shelf - Technically data base } Flawed Policy → Holding Public Meeting → No Response

2 Use Option 1 + 2

3 LLW - impose different requirements
stagnated issue

a) Ingrowth of Daughters - Radium ⟵ May not be acceptable
b) groundwater
c) vegetation - pathway

4. Calculate dose →

> No acceptable gndH2O models
> * Is there going to be a policy for std Region to enforce in the interim period.

Status Report :
Inventory
Characterize Source Term

* To date licensee has met license condition 250 pCi
* Probably not a viable option

PERCEPTION →

* Regulatory Bind involve USEPA - lack of putting standards
* congressional / GAO audits oversite
* 2 govt Mgrs incarcerated

Morass of dilemma impacting upon old plots - U / Th } soil - real issue

conversion factors 5512 suspect } models for groundwater not present.
Battelle to Review
Document not to helpful

Suggest our management both to USNRC and determine - what enforcement can be exacted from the Region.