

TO : GARY L. HERRIDGE
FROM: H. FUKUI

Attachment #6

1771-7.3

(1/3)

SUBJECT: C-8 Air Emissions (and Estimation of Community Impact)

According to the decision of C-8 international meeting held on October 24, 1990, C-8 scrubber installation at MDF is under designing.
The relation between C-8 concentration and stack height after scrubbing by DuPont stack model is as follows.

E: total site emission rate 0.060 Lb/h
CEG: 24-hour concentration goal 0.3 $\mu\text{g}/\text{m}^3$
C_s: estimated 24-hour concentration $\mu\text{g}/\text{m}^3$

$$C_{s1} = 32,000 \times 0.060 \times (49.2)^{-1.13} = 1.04 > 0.3 \quad (\text{stack height } 49.2\text{ft } [15\text{m}])$$

$$C_{s2} = 32,000 \times 0.060 \times (65.6)^{-1.13} = 0.598 > 0.3 \quad (\text{stack height } 65.6\text{ft } [20\text{m}])$$

$$C_{s3} = 32,000 \times 0.060 \times (95.1)^{-1.13} = 0.292 < 0.3 \quad (\text{stack height } 95.1\text{ft } [29\text{m}])$$

Consequently 95.1ft(29m) is required for stack height.
Even stack height is 49.2ft(15m), the value of C_s is 0.153 $\mu\text{g}/\text{m}^3$ that is much less than CEG value (0.3 $\mu\text{g}/\text{m}^3$). by the calculation of Japanese domestic law (Bosanquet, Carey and Halton's equation and Sutton's parameter).

Judging from MDF plant situation, it is very difficult to install a new 95.1ft(29m) stack.
Stack height is being planned as 49.2ft(15m) in accordance with these results.

If above our estimation method won't be accepted by you, the refined emission calculation performance will be required of Service Division at Louviers Building, the Air Quality and Hazards Engineering Group of DuPont.
Sorry to have troubled you, but would you make investigations as follows?

1. Will the calculation method based on Japanese domestic law be accepted by DuPont?
(Refer to attachment)

2. In case of your nonacceptance

- Is the refined emission calculation practicable with following data?
- If it can be calculated without the official request procedures from MDF to DuPont, please put it into practice.
- If it will be required the official request procedures, please let me know the way to make contact with Service Division of Air Quality and Hazards Engineering Group to require the refined emission calculation performance.

3. DATA

[case 1]

E: C-8 total site emission rate 0.060 Lb/h
H: Stack height for site emission 49.2 ft
G: Air flow rate 304,624 ft³/h at 46°C
d: Distance from emission point to nearest plant boundary 328 ft

[case 2]

E: C-8 total site emission rate 0.060 Lb/h
H: Stack height for site emission 65.6 ft
G: Air flow rate 304,624 ft³/h at 46°C
d: Distance from emission point to nearest plant boundary 328 ft

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4. Other inquiries

(2/3)

C-8 scrubber packing

- The reason to select 1-1/2" PALL-RING
(According to Japanese packing manufacturer. PALL-RING doesn't perform well.)
- Was it selected by the reason that it is easy to be cleaned in disassembly?
- It is considered that both ΔP and H_{ow} (or absorption efficiency) will be advantageous if HEIREX is used. Isn't it adopted owing to cleaning difficulty?

BEST REGARDS,

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