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9003650 0010436

August 15, 1990

Mr. Steven H. Wisness
Hanford Project Manager
U.S. Department of Energy
P.O. Box 550
Richland, Washington 99352

RE: Notice of Deficiency: 183-H Solar Evaporation Basins Closure Plan

Dear Mr. Wisness:

We have completed our review of your 183-H Solar Evaporation Closure Plan (Revision 1) dated January 1990. The deficiencies listed in enclosure 1 to this letter entail our final comments before approving this document.

Please note that we have retained the comment numbers from our March 7, 1989 NOD in order to avoid confusion. Therefore, the first new comment in this NOD begins with number 89. Based upon ongoing discussions between the unit managers, the enclosed comments are relatively minor and can be incorporated into the existing closure plan as page changes. Therefore, your response should consist of a revised document to be submitted to our office by September 15, 1990.

Once the enclosed comments are adequately addressed, we will incorporate this plan into the site wide permit. Approval of this plan will be determined after completion of the public comment period on the site wide permit.

Technical inquiries regarding this NOD should be directed to Ecology's 183-H Basins Unit Manager, Mr. Joe Witczak at (206) 438-7557.

Sincerely,

Timothy L. Nord
Hanford Project Manager
Nuclear and Mixed Waste Management

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Enclosures

cc: Dan Duncan
Cliff Clark
Fred Ruck
Administrative Record

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ENCLOSURE 1

NOD Comments for the 183-H Solar Evaporation Basins Closure Plan

No. Comment

46 Deficiency: Section II.B-3, Preliminary Cover Design, Page II-10

The text on lines 33 and 34 indicate that "measurement of flow in the drainage ditch would not be a good indicator of total cover performance". Although the presence and/or amount of runoff would not be an absolute indicator of the cover's performance, it certainly could be used to support future claims regarding this particular design.

Requirement: A means of measuring the precipitation collected in the runoff system must be installed and then monitored during the postclosure period.

47 & 71 Deficiency: Section II.B-1, Preliminary Cover Design, Page II-13

The "(Mitchell 1984)" report does discuss the resistance of a 1-mm (40 mil) thick polyethylene liner to starving rats. This conclusion, though, is based upon Schlegel Lining Technology's "Summary of Technical Data" dated 1983. Upon request, Schlegel provided the translation of a 1968 report where a 40 mil liner was not attacked by starving rats. Nonetheless, Schlegel also provided a 1978 report (Enclosure 2) which indicated that 100 mil liners can be attacked and damaged by rats under certain conditions. The latter of these reports recommends the following:

1. Underground installation of free edges should be avoided.

2. Angles of 90 degrees and less should be avoided.

3. Any radius of curvature should be greater than 60mm.

Requirement: The above three recommendations should be included in the definitive design.

57 Deficiency: Section III.A-1d, Vegetative Cover Condition, Page III-4

The text on lines 21 and 22 have not been edited to address our original comment.

Requirement: The text should be revised to indicate that a vegetative cover less than 50% will be reported to Ecology.

89 Deficiency: Section I.A-3b, Listed Nonroutine Wastes, Page I-11

The text on lines 24 and 25 do not support the numbers provided on Table I.A-2. Should the numbers be 4.5 pounds and 2 gallons, or 6.5 pounds and 0.25 gallons?

Requirement: Determine the accuracy of these numbers and ensure both the text and the table reflect the correct quantities.

90 Deficiency: Table I.A-4, Page I-16

This table does not list the "Probable Designation" as does Table I.A-3.

Requirement: Provide justification for not listing the probable designation in Table I.A-4.

9 0 1 1 8 8 5 0 0 7

91 Deficiency: Section I.B-1a, Current Status, Page I-67

The text on line 48 indicates that Basin Numbers 1 and 4 were decontaminated. In actuality, the basins were only partially decontaminated. Until it is proven through verification sampling, decontamination of the basins can only be assumed. Furthermore, it is Ecology's understanding that the wet sandblasting was not completely effective and that contamination currently remains in the concrete.

Requirement: The word "partially" must be inserted before the word "decontaminated" on line 48.

92 Comment: Figure I.B-1, 183-H Basins Closure, Page I-69/70

The clean closure option should be indicated on this figure.

93 Comment: Section I.B-3c(2), Treatment Performed Prior to Transport, Page I-102

Provide, or add as an appendix, a discussion of the destructive verification testing performed on the drummed wastes which was completed to ensure adequate solidification.

94 Deficiency: Table I.B-5, Decontamination Test Parameters and Cleanup Standards, Page I-111

There is a superscript "b" described below this table but not noted within the table itself.

Requirement: Indicate on this table where the footnote is applicable.

95 Deficiency: Section I.B-4c(1), Sampling to Assess Decontamination of Structural Components and Equipment, Page I-114

"WT01Q" is not a state dangerous waste designation code.

Requirement: Determine the appropriate code and correct this table. In addition, determine whether a code should also be listed under Basin Number 1.

96 Comment: Section I.B-4c(1), Sampling to Assess Decontamination o f Structural Components and Equipment, Page I-119

Typo. Delete the word "with" from line 17.

97 Deficiency: Section I.B-5, Closure with Contaminated Soils Remaining in Place, Page I-138

The applicability of financial requirements for the Hanford site is currently in dispute. Therefore, the sentence "The Subpart H (financial) requirements... " beginning on line 6 is not accurate.

Requirement: Since this sentence does not add to the substance of this paragraph or section, it can be deleted without causing the plan to be incomplete. Therefore, the above quoted sentence must be deleted.

98 Comment: Section I.B-6a(3), Notification of Authorities, Page I-142
At line 24, add "- Actions taken to mitigate the situation."

99 Deficiency: Figure I.B-20, 183-H Basin Closure Schedule, Page I-144
Activities 1, 2, and 3 are not labeled consistently with the supporting text on page I-145.

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Requirement: The word "Hazardous" in each of these activities should be changed to "Dangerous".

100 Deficiency: Section I.C-4, Financial Requirements, Page I-150

The applicability of certain financial requirements at the Hanford site is in dispute. Therefore, lines 49 and 50 are not accurate.

Requirement: It has been agreed by the Hanford Project Managers that at least closure cost estimates would be provided to Ecology. The 183-H Basins closure cost estimate may be provided to our office in the form of a letter between project managers. This same letter should then appear as an appendix to this document. Section I.C-4 could then be retitled as "Closure Cost Estimates" and state only that "Closure cost estimates can be found in Appendix __."

101 Comment: Section II.B-1, Preliminary Cover Design, Page II-4

Delete the word "minimum" in line 23. The word "minimum" indicates that the lifts could be greater than 6 inches in depth. Lifts greater than 6 inches are more difficult to adequately compact.

102 Deficiency: Figure II.B-3, Cover Plan, Page II-6

The 3:1 slopes discussed in the preliminary design convert to 18.4 degrees, not 18.4 percent as indicated on this figure.

Requirement: The percent signs after 18.4 should be changed to degree symbols.

103 Comment: Section III.A-2g(2), Groundwater Monitoring Program Procedures, Page III-58

It is Ecology's understanding that bladder pumps are not being used at this facility. Determine if this is the case and correct the text on line 26 if necessary.

104 Comment: Section III.A-2g(2), Groundwater Monitoring Program Procedures, Page III-59
U.S Testing Co. will no longer be used for analysis. Therefore, remove the reference to this company on line 36.

105 Comment: Section III.B-1b(2), Annual Training, Page III-72
Typo. Remove the semicolon from line 7.

106 Deficiency: NOD Response Table

A number of responses in the response table (36,38,39,40,41,42,43,44,72) are appropriate but cite the wrong page or line number which locates the correction.

Requirement: After making the final changes to the document, ensure the response table cites the appropriate location.

9 0 1 1 8 8 5 0 0 7 2

Prof. Dr. Med. Hans J. Einbrodt
Department Chairman
Hygiene and Industrial Medicine
RWTH University

Lochnerst. 4-20
51 Aachen

April 11, 1978

Schlegel Engineering GmbH
Postfach 105 825

2 Hamburg 1

Re: Testing of the SCHLEGEL-Sheet (models 3512 and 4541, thickness-2.3 - 2.6 mm) for rodent resistance.

Reference: Your application of January 10, 1977 from: Schr/by-

Official Evaluation

The PE sheets submitted to us were tested according to the "Provisional Testing Program for Official Evaluation" of July 15, 1975 by the committee on "Rodent Resistance of Plastic Membranes Used as Water Protection Liners". The tests were carried as follow in laboratory cages.

Experimental Conditions

The rats were enclosed in normal lab cages (56 x 34 x 19 cm), with "Nirosta" stainless steel mesh. The following types of rats were used.

A. Albino Rats, breed Wistar FW 49

B. Norwegian Wildfang Rats, laboratory bred

C. Domestic Wildfang Rats, newly captured

In each case, 3 rats were placed in a cage. Drinking water and standard feed were provided as needed. An adequate amount of sawdust was spread on the floor of each cage.

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The following SCHLEGEL-Sheet specimens (both models) were exposed to the rats.

I. 10 x 10 cm flat specimens, hanging freely in a cage without edge protection

II. Flat specimens as I. but with edge protection

III. Bent specimens, angle between 45° and 135°, back space filled with sand, no edge protection

IV. Cylindrical specimens, diameter 40-100 cm, no edge protection

The specimens could not be bent by hand due to their thickness.

In each case, one of the specimens listed above was placed in a separate cage and left there for 6 weeks.

The tests were repeated twice (each time with new rats) for types A and B.

No behavioral differences between types A and B or between males and females were observed; their activities can thus be described as a whole.

The domestic Wildfang rats (type C) were observed to be somewhat more passive, which is normal for newly captured animals. The tests were not repeated with this type due to risk to the personnel (danger of attack during feeding and cleaning).

<u>Results</u>

Specimen type I.

The specimens were attacked immediately by the rats. They sniffed the sheet intensively and attempted to gnaw it. Their interest for the freely suspended specimens subsided plainly after 2 to 6 hours. Gnawing traces could be observed on both edges after this time; however no gnawing traces could be found on the surface.

No change in the specimens after the first few hours was observed at 6 weeks.

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9 0 1 1 8 3 5 0 0 7 4

Specimen type II

The edge protection (metal frame) prevented gnawing on the edges. Apart from this, these were like Specimen type I, in that no gnawing damage to the sheet surface was observed.

Specimen type III

All bend angles tested were gnawed by the rats. Particularly angles of 90° and smaller were attacked, for practically the entire test duration. The gnawed spots were found very close together along the vertex of the angle and reached depths and diameters of roughly 2 mm., i.e. almost as thick as the sheet.

Specimen type IV

Like the flat and bent specimens, the cylinders proved to be of interest to the rats. However gnawing and biting were only observed for cylinders up to 60 mm in diameter. The edges were gnawed just as with the freely suspended specimens.

Evaluation

The cage tests indicate that the SCHIEGEL -Sheet (models 3510 and 4541) is suitable with regard to rodent (rat) resistance for use as water protection sealing under the following conditions:

- Underground installation of free edges should be avoided, as rat gnawing cannot be excluded.
- Angles of 90° and less should be avoided as these were subject to considerable gnawing attack by rodents of the size of brown rats.
- If curved areas are necessary (eg. on embankments), they should have a radius of curvature greater than 60 mm if possible.

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We recommend further testing with muskrats in open air cages, as this testing may prove these conditions unnecessary.

(Dr. rer. nat. Erpenbeck) (Prof. Dr. Med. H.J.Einbrodt)

Translation: Mr.D. Etter
Hamburg, June 9, 1978
DE/sbm

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DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
T. L. Nord, Ecology	S. H. Wisness, DOE-RL	Incoming: 9003650

Subject

NOD RESPONSE TABLE: 183-H SOLAR EVAPORATION BASINS CLOSURE PLAN

Internal Distribution

Approval	Date	Name	Location	w/att
		Correspondence Control		
		M. R. Adams	H4-55	X
		J. D. Bauer	B3-15	X
		R. J. Bliss	B3-04	
		L. E. Borneman	H4-57	X
		L. C. Brown	H4-51	X
		S. B. Clifford	H4-57	X
		W. T. Dixon	B2-35	X
		J. J. Dorian	H4-15	X
		C. H. Eccleston	H4-57	X
		K. R. Fecht	H4-56	X
		K. A. Gano	X0-41	X
		L. A. Garner	B2-19	X
		C. J. Geier	H4-57	X
		E. M. Greager	L6-60	X
		C. B. Hays	H4-57	X
		M. C. Hughes	R1-15	X
		G. W. Jackson	R2-29	X
		W. L. Johnson	H4-55	X
		D. H. Jones	H4-16	X
		D. G. Kachele	S4-67	X
		L. A. Kemp	H4-17	X
		A. D. Krug	H4-55	X
		R. J. Landon	B2-19	X
		M. J. Lauterbach	H4-55	X
		R. E. Lerch (Assignee)	B2-35	X
		C. J. Lynch	H4-57	X
		A. C. McKarns	L6-60	X
		M. A. Mihalic	R1-15	X
		President's Office	B3-01	
		EDMC	H4-22	X
		R. E. Peterson	H4-56	X
		E. W. Powers	R2-77	X
		S. M. Price	H4-57	X
		W. H. Price	S0-03	X
		F. A. Ruck III	H4-57	X
		D. E. Simpson	B3-51	X
		D. R. Speer	R2-77	X
		B. L. Vedder	B2-19	X
		J. L. Waite	B2-35	X

Correspondence Control received poor copy of enclosure (last 4 pages)

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