

November 5, 1996

Ms. Gayle F. Elliott, Manager
Safety and Licensing
B&W Fuel Company
Commercial Nuclear Fuel Plant
P.O. Box 11646
Lynchburg, Virginia 24506-1646

SUBJECT: FREE RELEASE OF WET-WEATHER STREAM AREA (TAC NO. L30746)

Dear Ms. Elliott:

This refers to your application dated December 1, 1994, requesting free release of the wet-weather stream, our request for additional information dated September 27, 1995, and your response dated May 15, 1996. Our review of your response dated September 27, 1995, has identified additional information that is needed before final action can be taken on your request. The additional information, specified in the enclosure, should be provided within 60 days of the date of this letter. Please reference the above TAC No. in future correspondence related to this request.

As we discussed on October 18, 1996, I recommend that we have a conference call or a public meeting to discuss the additional information being requested. After you have reviewed our comments to your May 15, 1996, letter, please contact me on (301) 415-8139, to arrange either the conference call or the meeting.

Sincerely,

Original signed by:

Michael Lamastra
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

Docket 70-1201
License SNM-1168

Enclosure: Additional Information

Distribution (Control No. 8195)

Docket 70-1201

PUBLIC

NRC File Center

NMSS r/f

FCSS r/f

FCLB r/f

Region II

KHardin

GTroup, RII

[G:\adinfo.m]

OFC	FCLB	L	FCLB	E	FCLB	E
NAME	MLamastra		PShea	pus	MTokar	11/4
DATE	10/4/96		10/4/96		10/5/96	

9611150191 961105
PDR ADOCK 07001201
C PDR

130124

NRC FILE CENTER COPY



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 5, 1996

Ms. Gayle F. Elliott, Manager
Safety and Licensing
B&W Fuel Company
Commercial Nuclear Fuel Plant
P.O. Box 11646
Lynchburg, Virginia 24506-1646

SUBJECT: FREE RELEASE OF WET-WEATHER STREAM AREA (TAC NO. L30746)

Dear Ms. Elliott:

This refers to your application dated December 1, 1994, requesting free release of the wet-weather stream, our request for additional information dated September 27, 1995, and your response dated May 15, 1996. Our review of your response dated September 27, 1995, has identified additional information that is needed before final action can be taken on your request. The additional information, specified in the enclosure, should be provided within 60 days of the date of this letter. Please reference the above TAC No. in future correspondence related to this request.

As we discussed on October 18, 1996, I recommend that we have a conference call or a public meeting to discuss the additional information being requested. After you have reviewed our comments to your May 15, 1996, letter, please contact me on (301) 415-8139, to arrange either the conference call or the meeting.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Lamastra", is written over a horizontal line.

Michael Lamastra
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

Docket 70-1201
License SNM-1168

Enclosure: Additional Information

U.S. NUCLEAR REGULATORY COMMISSION'S COMMENTS
ON THE ADDITIONAL INFORMATION PROVIDED BY B&W IN RESPONSE TO
STAFF QUESTIONS AND COMMENTS REGARDING THE
FREE RELEASE OF THE B&W FUEL COMPANY
(FRAMATOME COGEMA FUELS) WET-WEATHER STREAM AREA

Response to NRC Comment #1:

As requested, the data summary provided satisfies the first of the 3 conditions recommended in NUREG/CR-5849 (i.e., the average concentration of the entire wet weather stream is less than 30 pCi/g at a 95% confidence level). The staff is also satisfied with the approach taken by the licensee to demonstrate that the survey data successfully meets the second condition recommended in NUREG/CR-5849 (i.e., that the average concentration in each contiguous 100 m² area is less than 30 pCi/g). However, two of the contiguous areas averaged 30 pCi/g and one contiguous area averaged 31 pCi/g. NRC staff understands that the background was not subtracted from the original measurements and that the net values may be lower than the data reported. Please provide the results of background soil measurements and describe how background measurements were obtained.

In response to the third recommendation of NUREG/CR-5849, your response does not adequately satisfy the staff concerns that the concentration of enriched uranium in any elevated area above 30 pCi/g is less than $(100/A)^{0.5}$ times 30 pCi/g. The NRC finds the action limit of 2.24 times 30 pCi/g, based on 16.8 m² area per data point, is an acceptable approach for demonstrating compliance with the hot spot criteria. However, one problem with your approach is that the $(100/A)^{0.5}$ formula used to derive a release limit based on an area of 16.8 was compared to the average concentration of the entire grid; this is not an appropriate application of this formula. The derived limit using $(100/A)^{0.5}$ should be compared to the average concentration over area 'A'. For all data points with concentrations above 67 pCi/g, you should obtain additional measurements to determine the areal extent of elevated activity or used previous data, if available, to evaluate compliance with the hot spot criteria.

It is still not clearly evident from the data summary as to which data points are from the 1991 characterization survey and which are from the 1994 post-remediation survey. A comparison of the data summary provide June 7, 1996, with the original report dated December 1, 1994, indicates that the 1994 post remediation activity levels are higher than the 1991 characterization data. This is illustrated by the data points listed in the table below. Please explain why activity at certain data points increased after remediation.

Data Point	1991 Survey	1994 Survey
C3-5	3.24 pCi/g	89 pCi/g
Q7-5	32.2 pCi/g	43 pCi/g
S6-5	20.0 pCi/g	46 pCi/g
T6-5	2.67 pCi/g	64 pCi/g
T8-5	9.51 pCi/g	70 pCi/g
T10-2	67.2 pCi/g	90 pCi/g

ATTACHMENT

Response to NRC Comment #2:

Pages 2 and 30 of the survey report do not state that the Reuter Stokes instrument was used to scan the surface of the wet-weather stream. The report states that "A Reuter Stokes instrument was used to obtain radiation levels at the sample point location." As mentioned in the previous NRC staff comment, scan surveys are an important part of a final survey. NUREG/CR-5849 recommends that affected outdoor areas receive a surface scan of 100 percent of the affected area using instrumentation with appropriate detection sensitivity. A Reuter Stokes instrument (the staff assumes you are referring to a pressurized ion chamber-PIC) is appropriate for exposure rate measurements, which are also recommended as part of a final survey. However, PICs are not the most appropriate instruments to conduct surface scans. Surface scans are conducted prior to direct measurements to identify areas of elevated activity and direct measurements are then performed at these elevated areas to define the extent and activity. In the absence of sufficient surface scans, the staff is concerned that you have not adequately identified areas of elevated activity.

Response to NRC Comment #3:

You have not demonstrated that the wet-weather stream is suitable for unrestricted release. As indicated in our original comment, the issues listed below need to be addressed before any confirmatory survey of the area should be conducted.

- (1) In the absence of adequate surface scans, the NRC staff is not confident that you have sufficiently identified all elevated areas of activity (see Comment #2).
- (2) You have not appropriately evaluated hot spots (see Comments #1 and #8).
- (3) The survey does not include exposure rate measurements as recommended in NUREG/CR-5849.
- (4) The highest points on the data summary appear to be taken from the 1994 post remediation survey (i.e., C3-5 @ 89 pCi/g, T6-5 @ 64 pCi/g, T8-5 @ 70 pCi/g, T10-5 @ 90 pCi/g). This indicates that contamination is still present (see Comment #1).

Response to NRC Comment #6:

Your response only addresses the second part of this comment. Please address the first part of this comment.

In response to the second part of this comment, you state, "... extensive surveys were conducted which concluded that the contamination was limited to the 0-6" depth." Please provide the information or data to illustrate and validate this statement.

Response to NRC Comment #8:

As with Comment #1, NRC Comment #8 reiterates that the survey data presented in the original report does not demonstrate compliance with hot spot criteria (i.e., $(100/A)^{0.5}$). You responded to this comment stating that additional samples collected in 1994 around certain data points support your assumption that contamination did not spread beyond the 16.8 m² area. The NRC staff did not reach the same conclusion after a second review of your original report. For example, on page 34 of the original report are illustrated the samples collected within Grid S-6. The highest sample point is S-6-6 (102 pCi/g), which is in the upper most left corner of the grid block. Without additional information, the extent of elevated activity above and to the left of data point S-6-6 is not clear. In fact, all grid blocks presented on pages 34-40 of the original report contain exterior data points with elevated activity. This does not indicate that contamination is confined within the assumed 16.8 m² area. As stated in Comment #1, you should obtain additional measurements to determine the areal extent of elevated activity around those data points that exceed 67 pCi/g (the derived hot spot limit for 16.8 m² contaminated areas) or use previous data, if available, to evaluate compliance with the hot spot criteria.