



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

December 31, 2001

Docket No. 03005222  
Control No. 130734

License No. 29-00139-02

John Mamone  
Vice President, Operations Support  
Bristol-Meyers Squibb Company  
WMG Technical Operations  
NB137-261  
P. O. Box 191  
New Brunswick, NJ 08903-0191

**SUBJECT: BRISTOL-MEYERS SQUIBB COMPANY, REQUEST FOR ADDITIONAL INFORMATION CONCERNING APPLICATION FOR AMENDMENT TO LICENSE, CONTROL NO. 130734**

Dear Mr. Mamone:

This is in reference to your letter dated December 14, 2001, requesting to amend Nuclear Regulatory Commission License No. 29-00139-02. This amendment request is for the review of the December 2001 "Radiological Decommissioning Plan for the Radiodiagnostic Manufacturing Facility and Associated Equipment" for incorporation into your licensed program. A decommissioning plan is required in accordance with 10 CFR 30.36(g)(1) when the procedures and activities necessary to carry out decommissioning have not previously been approved. Your decommissioning plan was prepared in accordance with NUREG-1727, "NMSS Decommissioning Standard Review Plan" (NUREG-1727). The level of detail required by NUREG-1727 varies according to the complexity of the facility and the activities performed. In order to continue our review, we need the following additional information:

1. Sections 1.0 and 4.0 state that the facilities to be decommissioned are limited to Buildings 124 and 122, the B-83 tanks, the B-124 tanks, and the stack adjacent to Buildings 124 and 122. Our records indicate that activities were performed also in Buildings 74 (research and development using technetium-99, technetium-99m, molybdenum-99, gadolinium-153 and rubidium-186), 80-84 (iodine-131), 92 (radionuclide product testing), 102 (radioimmunoassay) and 104 (not specified). Confirm that you continue to use these facilities, or that the facilities were released for unrestricted use pursuant to activities previously authorized by your broad scope license.
2. Sections 1.0, 5.0, and 6.0 state that you will use the NRC screening values, and understand that these levels are considered to be ALARA (as low as is reasonably achievable). However, the NRC does not state that screening levels are ALARA. The screening levels are those maximum levels for each radionuclide, that if they remained present in those concentrations on building surfaces or in surface soils, would result in a dose of 25 millirem in one year to a member of the critical population. The screening levels may not be as low as is reasonable achievable, depending on the radionuclide

and its chemical form, and the location of the contamination. Your statement that you plan to use the NRC screening values, but also reduce residual contamination to levels close to background, is acceptable. Revise Sections 1.0, 5.0 and 6.0 to remove the statement that screening levels are ALARA.

3. Section 2.2 and 4.0 list the radionuclides that were used in past activities in Buildings 122 and 124. A review of our past records confirms use of tritium and carbon as late as 1978, in millicurie quantities. Past inspection records indicate that gadolinium-153 and rubidium-186 were also used at your site, in Building 74.
4. Section 2.3 refers to past removal of below-grade waste decay tanks in the location where Rooms 108, 109, 116 and 118 of Building 124 are now located. Describe your survey and/or sampling plans for confirming that soil surrounding the former tanks is not contaminated, or explain why you do not plan to do any surveys or sampling of this area.
5. Section 2.4 refers to spills on effluent tanks, but it is not clear if this refers to the B-83 tanks, the B-124 tanks, or the tanks described in Section 2.3. Clarify which tanks are discussed in this section.
6. In general, Section 3 of your plan is less detailed than the corresponding section of NUREG-1727, but provides sufficient information regarding the facilities affected by the licensed activities performed. However, expand Section 3.4 of your plan to describe the impact of your decommissioning activities on the environment, considering the meteorology and climatology, geology and seismology, surface water hydrology, groundwater hydrology, and their effect on the natural resources, the ecology and any endangered species [Sections 3.4 through 3.9 of NUREG-1727]. If you do not expect any impact on the environment from your decommissioning activities, state this and explain why. Section 10.0 should also be revised to reflect changes in Section 3.4 of your plan.
7. Figures 4-5 through 4-9 show the Class 1, Class 2, and Class 3 areas in Buildings 122 and 124. Although this is acceptable for the characterization survey, confirm that you will provide diagrams showing also the survey units in each Class area in your plans for your Final Status Survey.
8. Section 4.3 states that a beta/gamma screening value of 10,000 disintegrations per minute (dpm) per 100 square centimeters of area ( $\text{cm}^2$ ) will be used in the characterization survey. Although this may be used during characterization, this value exceeds the NRC screening levels for cobalt-60 (7,100 dpm/100  $\text{cm}^2$ ) and strontium-90 (8,700 dpm/100  $\text{cm}^2$ ) that may be present. The final surveys must demonstrate that residual radiation from these radionuclides does not exceed the NRC screening values. Confirm that you will address this issue in your plans for your Final Status Survey.
9. Sections 4.4, 9.4 and 9.5 describe the survey instrumentation that you plan to use during the characterization surveys. Confirm that, in your plans for your Final Status Survey, you will provide the equations used for calculation of the minimum detectable activity for the various instruments used, including those used for scanning surveys, for

- the different radionuclides. Particular attention should be given to any survey instruments used for detection of alpha radiation.
10. Sections 4.8 and 13.0 describe the biased surveys and sampling that will be performed during characterization. Confirm that your final Status Survey will be performed using unbiased surveys and sampling in accordance with the MARSSIM guidance. In your plans for you Final Status Survey, you should provide the assumptions and calculations used to determine the number of samples that are needed in each survey unit.
  11. Sections 4.0 and 8.0 do not specify the radiation or contamination levels in the facilities to be decommissioned. Provide a summary of the major areas of contamination, and the levels of contamination and/or radiation in those areas, based on your routine survey program.
  12. Section 9.5 does not provide sufficient detail regarding any expected air monitoring or respiratory protection for workers, particularly those involved in activities such as cutting pipe, grinding surfaces and scabbling floors, which could generate airborne radioactive dusts and fumes. Review Sections 10.1.1 and 10.1.2 of NUREG-1727 and provide the requested information, or an explanation of why air monitoring and respiratory protection are not necessary during your decommissioning activities.
  13. Section 10.0 does not provide sufficient explanation of why environmental monitoring is not required during decommissioning activities. Review Section 11.0 of NUREG-1727 and provide the requested information, or an explanation of why an environmental monitoring and control program is not necessary during your decommissioning activities.
  14. Section 11.0 does not discuss mixed waste. State if you do or do not expect mixed waste to be generated as a result of decommissioning activities. If so, provide the information required by Section 12.3 of NUREG-1727.
  15. Section 13.4 provides a brief explanation of your Final Status Survey design. The level of detail is not sufficient for us to determine if your Final Status Survey is acceptable at this time. You may submit your detailed plan for your Final Status Survey for our review and approval prior to performing the Final Status Survey. Please note that, if you plan to use any site-specific DCGLs other than the NRC screening levels, you must obtain NRC approval to use those DCGLs. Typically, the review process for site-specific DCGLs requires approximately 6 months.
  16. Section 7.2 states that you expect to complete the characterization survey in February 2002, any decommissioning activities in the second calendar quarter of 2002, and the Final Status Survey by the fourth calendar quarter of 2002. We request that you inform us of your survey schedules so that inspections can be performed of the characterization, decommissioning, and final status surveys. Such inspections allow us to evaluate these activities in progress and perform comparative surveys. This may reduce or eliminate the need for NRC confirmatory surveys to be performed after your Final Status Survey is completed. You may contact me at (610) 337-5040 or Pamela Henderson at (610) 337-6952 to provide specific information regarding your survey schedule. We can also be contacted by e-mail at [exu@nrc.gov](mailto:exu@nrc.gov) and [pjh1@nrc.gov](mailto:pjh1@nrc.gov).

J. Mamone  
Bristol-Meyers Squibb Company

4

In accordance with 10 CFR 2.790, a copy of this letter will be placed in the NRC Public Document Room and will be accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html>.

We will continue our review upon receipt of this information. Please reply to my attention at the Region I Office and refer to Mail Control No. 130734. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5040.

If we do not receive a reply from you within 30 calendar days from the date of this letter, we shall assume that you do not wish to pursue your application.

Sincerely,

***Original signed by Elizabeth Ullrich***

Betsy Ullrich  
Senior Health Physicist  
Nuclear Materials Safety Branch 2  
Division of Nuclear Materials Safety

cc:  
Michael J. Vala, C.H.P., Radiation Safety Officer

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