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March 29, 2017

Mr. George Alexander  
Nuclear Regulatory Commission  
11545 Rockville Pike  
Mail stop T8F5  
Rockville, MD 20852

RE: NRC License number 24-16273-01  
Request for Approval of Alternative Decommissioning Schedule

Mr. Alexander:

To address timeliness requirement in 10 CFR 30.36 (h)(1) Sigma-Aldrich Manufacturing LLC (Sigma) hereby submits the following Alternative Decommissioning Schedule for your approval.

#### Background

In a letter dated March 19, 2013, Sigma requested an extension of its decommissioning license until April 30, 2015.

On August 9, 2013, a public meeting was held between Sigma and U.S. Nuclear Regulatory Commission (NRC) to discuss Sigma's Alternative Schedule (license extension) and other aspects of the decommissioning program. A summary document was issued by the NRC on October 12, 2013. It was noted in the summary document that the NRC was treating Sigma's request for a license extension as an Alternative Schedule Request. It was further noted by the NRC that (1) as long as Sigma was actively decommissioning, there was no need to request an extension of the license expiration date, and (2) Sigma intended to revise its Decommissioning Plan (DP) and submit an Alternative Schedule request at the time.

Sigma determined to revise the DP using a site specific dose model. In order to obtain a comprehensive set of data before revising the DP, Sigma has since performed additional surveys to determine the extent of contamination in soil and groundwater. As of March 2017, soil surveys have been completed to determine the horizontal and vertical extent of contamination. The last groundwater sampling is scheduled to occur in July 2017, which will complete the effort to collect four quarters of groundwater data over a calendar year.

Contributing to an extended timeline for completion of the surveys noted above are the following:

- (1) In February 2013, the City of Maryland Heights informed Sigma that their code required Sigma to remove the asphalt parking lot on the Fort Mims Site. Following significant debate with the local authority over this code, Sigma agreed to remove the asphalt in February 2014. Given our status within the decommissioning process, this had to be performed under the oversight of our Decommissioning Vendor, DDES LLC.

- (2) Beginning in November 2013, Sigma pursued an approach to eliminate drinking water from the exposure pathway via demonstration that the groundwater was already unsuitable as a drinking water source. This required several communications with the Missouri Department of Natural Resources (MDNR) and NRC. In a final meeting with MDNR in October 2014, MDNR could not concur in writing with our assessment.

The above activities resulted in a delay of nearly one year to perform necessary soil and groundwater surveys.

Impact on Safety to the Public

Throughout the decommissioning process, the Fort Mims Site has been a Radioactive Restricted area, and has been posted as such. All activities at the site have been conducted under the oversight of Sigma's RSO and a licensed decommissioning vendor. With the data collected thus far, Sigma is confident that radioactive dose to the public is well below 25 mrem/year. Thus, the extended time needed to complete the decommissioning has not had an impact on public safety.

Alternative Schedule for Completion of Decommissioning

Sigma expects to submit a revised DP and request for termination of its license by August 31, 2017.

Please let me know if you have any questions or concerns regarding this request for Alternative Schedule for decommissioning.

Sincerely,



Thomas K Spencer  
Radiation Safety Officer  
Sigma-Aldrich Manufacturing LLC