

# UNIVERSITY of MISSOURI

RESEARCH REACTOR CENTER

April 4, 2017

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Mail Station P1-37  
Washington, DC 20555-0001

REFERENCE: Docket No. 50-186  
University of Missouri – Columbia Research Reactor  
Renewed Facility Operating License No. R-103

SUBJECT: Written communication as specified by 10 CFR 50.4(a) regarding correcting Stack Effluent Information in the University of Missouri Research Reactor – Reactor Operations Annual Report – Calendar Year 2016

The purpose of this letter is to correct a discrepancy in the University of Missouri Research Reactor (MURR) Reactor Operations Annual Report for calendar year 2016. On Page VII-2 of the Annual Report, with the exception of Argon-41, the total activity of each isotope released from MURR through the facility exhaust stack listed in Table 2 was not properly converted from microcuries to Curies; therefore, they were over reported by a factor of  $10^6$ . This occurred when the isotope activities were transferred from one Excel spreadsheet to another without converting. Argon-41 total activity was properly reported because that value is obtained through a different calculational process and has its own separate Excel spreadsheet. Additionally, the average concentration released of each isotope was also properly reported. In the future, MURR will report the total annual release of each isotope in microcuries instead of Curies to prevent this error from occurring again. MURR Technical Specification 6.6.e(6) states, "A summary of the nature and amount of radioactive effluents released or discharged to the environs beyond the effective control of the licensee as measured at or prior to the point of such release or discharge;" There is no guidance or requirement as to whether the total release should be reported in microcuries or Curies.

The following Table correctly lists the isotopes and the total activity released from MURR ( $> 0.0001\%$  of the Technical Specification Limit) during calendar year 2016 by order of % of the Technical Specification limit. This Table replaces Table 2 on Page VII-2 of the 2016 MURR Reactor Operations Annual Report.

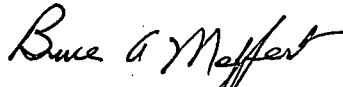
ADD  
NRR




Isotope	Average Concentration (µCi/ml)	Total Release (Ci)	TS Limit Multiplier	% TS
Ar-41	1.18E-06	5.28E+02	350	33.7143
I-131	5.82E-12	2.61E-03	1	2.9094
H-3	1.30E-08	5.80E+00	350	0.0370
Co-60	4.17E-15	1.87E-06	1	0.0083
I-125	1.17E-14	5.26E-06	1	0.0039
C-14	1.07E-11	4.80E-03	1	0.0036
Kr-79	6.91E-10	3.09E-01	350	0.0028
Xe-131m	1.93E-08	8.65E+00	350	0.0028
Os-191	4.70E-15	2.11E-06	1	0.0002
Hf-181	1.37E-15	6.14E-07	1	0.0002
I-133	6.43E-13	2.88E-04	350	0.0002
Kr-87	7.81E-12	3.50E-03	350	0.0001
S-35	2.53E-15	1.13E-06	1	0.0001
As-76	4.45E-13	1.99E-04	350	0.0001
Br-82	9.51E-13	4.26E-04	350	0.0001

If there are any questions regarding this response, please contact me at (573) 882-5118 or MeffertB@missouri.edu.

Sincerely,

  
Bruce A. Meffert  
Reactor Manager

ENDORSEMENT:  
Reviewed and Approved,

  
Ralph A. Butler, P.E.  
Director

RAB/jlm

xc: Reactor Safety Subcommittee  
Mr. Geoffrey Wertz, U.S. Nuclear Regulatory Commission  
Mr. Johnny Eads, U.S. Nuclear Regulatory Commission