



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

April 1, 2019

Dr. Robert Bean, Director  
Purdue University Radiation Laboratory  
School of Nuclear Engineering  
400 Central Drive  
West Lafayette, IN 47907-2017

SUBJECT: PURDUE UNIVERSITY – ISSUANCE OF AMENDMENT NO. 14 TO RENEWED FACILITY OPERATING LICENSE NO. R-87 FOR THE PURDUE UNIVERSITY RESEARCH REACTOR FACILITY DIGITAL INSTRUMENTATION AND CONTROLS UPGRADE (EPID NO. L-2017-LLA-0251)

Dear Dr. Bean:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 14 to Renewed Facility License No. R-87 for the Purdue University Reactor (PUR-1). This amendment consists of changes to the renewed facility operating license and technical specifications (TSs) in response to the PUR-1 application dated February 27, 2017, as supplemented by letters dated June 21, 2017, December 18, 2017, March 2, 2018, September 20, 2018, October 5, 2018, and March 19, 2019.

The amendment authorizes Purdue University to upgrade the instrumentation and control systems for the PUR-1 by replacing them with new digital instrumentation and controls systems that include the neutron flux monitoring system and detectors (fission chamber, compensated ionization chamber, and two uncompensated ionization chambers), associated cabling, safety channels, equipment racks, and the control console. The amendment makes editorial changes, requested by the licensee, to the surveillance requirements in TSs 4.2, 4.4, and 4.6, to provide consistency with the corresponding limiting conditions for operation. The amendment also revises license condition 2.C. to add the word “in” to the first sentence, correcting a grammatical error in license condition 2.C., and adds license condition 2.C.4., requiring certain testing of the reactor protection and control systems, prior to resuming operation of the reactor.

The NRC staff's safety evaluation supporting Amendment No. 14 is enclosed. If you have any questions, please contact me at (301) 415-3398 or by electronic mail at [Cindy.Montgomery@nrc.gov](mailto:Cindy.Montgomery@nrc.gov).

Sincerely,

*/RA/*

Cindy Montgomery, Project Manager  
Research and Test Reactors Licensing Branch  
Division of Licensing Projects  
Office of Nuclear Reactor Regulation

Docket No. 50-182  
License No. R-87

Enclosures:

1. Amendment No. 14 to Renewed Facility  
Operating License No. R-87
2. Safety Evaluation

cc: See next page

Purdue University

Docket No. 50-182

cc:

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Test, Research and Training  
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University of Maryland  
4418 Stadium Drive  
College Park, MD 20742-2115

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**ADAMS Package No. ML18275A090; Transmittal Ltr: ML18262A434; Amendment: ML18275A124;  
SER: ML18275A109 \*concurring via email NRR-106**

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