

September 24, 2013

Dr. Robert Dimeo, Director  
NIST Center for Neutron Research  
National Institute of Standards and Technology  
U. S. Department of Commerce  
100 Bureau Drive, Mail Stop 8561  
Gaithersburg, MD 20899-8561

SUBJECT: NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, ISSUANCE OF  
AMENDMENT NO. 9 TO THE RENEWED FACILITY LICENSE NO. TR-5 FOR  
THE NATIONAL BUREAU OF STANDARDS REACTOR (TAC NO. ME9110)

Dear Dr. Dimeo:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 9 to Renewed Facility Operating License No. TR-5 for the National Institute of Standards and Technology, National Bureau of Standards Reactor. The amendment consists of a change to the facility license in response to the request as stated in your letter dated July 12, 2012. The amendment also makes changes to Technical Specifications 3.7, 4.7.2, and 6.8 to clarify operation of the facility environmental monitoring procedure and record retention.

A copy of the safety evaluation supporting Amendment No. 9 is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

**/RA/**

Xiaosong Yin, Project Manager  
Research and Test Reactors Licensing Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Docket No. 50-184  
License No. TR-5

Enclosures:

1. Amendment No. 9
2. Safety Evaluation

cc w/encls: See next page

cc:

Environmental Program Manager III  
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Air & Radiation Management Adm.  
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Dr. David Sean O'Kelly, Chief Reactor Operations  
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100 Bureau Drive, Mail Stop 8561  
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Test, Research, and Training  
Reactor Newsletter  
University of Florida  
202 Nuclear Sciences Center  
Gainesville, FL 32611

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Dear Dr. Dimeo:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 9 to Renewed Facility Operating License No. TR-5 for the National Institute of Standards and Technology, National Bureau of Standards Reactor. The amendment consists of a change to the facility license in response to the request as stated in your letter dated July 12, 2012. The amendment also makes changes to Technical Specifications 3.7, 4.7.2, and 6.8 to clarify operation of the facility environmental monitoring procedure and record retention

A copy of the safety evaluation supporting Amendment No. 9 is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

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Xiaosong Yin, Project Manager  
Research and Test Reactors Licensing Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Docket No. 50-184  
License No. TR-5

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cc w/encls: See next page

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AAdams, NRR		PBlechman, NRR	CBassett, NRR
			GLappert, NRR

**ADAMS Accession Nos.**

**PKG: ML13043A097, AMD: ML13043A104, BWI: ML13043A111, NRR-058**

OFFICE	PRLB/PM	PRLB/LAIT	PRLB/LA	OGC	PRLB/BC	PRLB/PM
NAME	XYin	PBlechman	GLappert	SUttal, NLO	AAdams	XYin
DATE	7/9/2013	7/15/2013	7/15/2013	9/24/2013	9/11/2013	9/24/2013

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UNITED STATES NUCLEAR REGULATORY COMMISSION  
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY  
DOCKET NO. 50-184  
NATIONAL BUREAU OF STANDARDS TEST REACTOR  
AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 9  
License No. TR-5

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for an amendment to Renewed Facility Operating License No. TR-5, filed by the National Institute of Standards and Technology (the licensee) on July 12, 2012, as supplemented by letter dated May 14, 2013, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in Chapter I of Title 10 of the *Code of Federal Regulations* (10 CFR);
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this license amendment is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the enclosure to this license amendment, and paragraph 2.C.2. of License No. TR-5 is hereby amended to read as follows:

Technical Specifications

2. The Technical Specifications contained in Appendix A, as revised by Amendment No. 9, are hereby incorporated in the license. The licensee shall operate the reactor in accordance with the Technical Specifications.
3. This license amendment is effective on the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Alexander Adams, Jr., Chief  
Research and Test Reactors Licensing Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Enclosure:  
Facility Operating License  
and Technical Specifications  
changes

Date of Issuance: September 24, 2013

ENCLOSURE TO LICENSE AMENDMENT NO. 9

RENEWED FACILITY OPERATING LICENSE NO. TR-5

DOCKET NO. 50-184

Replace the following page of the Renewed Facility Operating License No. TR-5. The revised page is identified by amendment number and contains a vertical line indicating the area of change.

Facility Operating License

Remove

Page 3

Insert

Page 3

ENCLOSURE TO LICENSE AMENDMENT NO. 9

RENEWED FACILITY OPERATING LICENSE NO. TR-5

DOCKET NO. 50-184

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages to the Renewed Facility Operating License No. TR-5. The revised pages are identified by amendment number and contain vertical lines indicating the areas of changes.

Technical Specifications

Remove	Insert
Page 24	Page 24
Page 25	Page 25
Page 26	Page 26
Page 41	Page 41
Page 53	Page 53
Page 54	Page 54

- a. up to 45.0 kilograms of contained uranium-235 of any enrichment, provided that less than 5.0 kilograms of this amount be unirradiated;
    - b. to possess and use, but not to separate such special nuclear material as may be produced by operation of the reactor.
  3. Pursuant to the Act and 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," to possess and use a two-curie americium-beryllium neutron source for reactor startup.
  4. Pursuant to the Act and 10 CFR Part 30 to possess, use, and transfer but not to separate, except for byproduct material produced in non-fueled experiments, such byproduct material as may be produced by operation of the reactor.
- C. This license shall be deemed to contain and is subject to the conditions specified in Parts 20, 30, 50, 51, 55, 70, 73, and 100 of the Commission's regulations; is subject to all applicable provisions of the Act and rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:
1. The licensee is authorized to operate the reactor at steady-state power levels up to a maximum of 20 megawatts (thermal).
  2. The technical specifications contained in Appendix A, as revised by Amendment No. 9, are hereby incorporated in the license. The licensee shall operate the reactor in accordance with the technical specifications.
  3. The licensee shall maintain and fully implement all of the provisions of the Commission-approved physical security plan, including changes made pursuant to the authority of 10 CFR 50.54(p). The approved physical security plan consists of a National Institute of Standards and Technology document, withheld from public disclosure pursuant to 10 CFR 73.21, entitled, "NBSR Safeguards Plan," dated May 1983, transmitted by letter dated May 5, 1983.



- (2) One fission product monitor is operable or sample analysis for fission product activity is conducted daily.
- (3) One secondary coolant activity monitor is operable or a D<sub>2</sub>O storage tank level monitor is operable.
- (4) Two area radiation monitors are operable on floors C-100 and C-200.
- (5) The primary tritium concentration is less than or equal to 5 Ci/l.
- (6) Removed to 3.7.2.

When required monitors are inoperable, then portable instruments, survey or analysis may be substituted for any of the normally installed monitors in specifications (1) – (4) for periods of one (1) week or for the duration of a reactor run.

#### Basis

- (1) The requirements of 10 CFR 20.1502(b) (2007) are met by regular monitoring for airborne radionuclides and bioassay of exposed personnel. The two primary airborne radionuclides present at the NBSR are <sup>41</sup>Ar and <sup>3</sup>H. The normal air exhaust system draws air from areas supplied by conditioned air, such as the first and second floors of the confinement building. The irradiated air exhaust system draws air from areas most likely to have contaminated air, such as waste sumps and penetrations in the biological shield. Normal and irradiated air are monitored continuously with G-M detectors sensitive to  $\beta$  and  $\gamma$  emissions and the combined air is exhausted through the stack. The stack release is monitored with a G-M detector.
- (2) A fission products monitor located in the helium sweep gas will give an indication of a “pin-hole” breach in the cladding so that early preventive measures can be taken. When this monitor is not functional, daily testing will ensure that the fuel cladding is intact. These two measures ensure that there are no undetected releases of fission products to the primary coolant.
- (3) Monitoring for primary water leakage into the secondary coolant is done by a secondary water monitor that is sensitive to radionuclides in the primary water. Leakage of primary to secondary would also be detected by a change in the D<sub>2</sub>O storage tank level
- (4) Fixed gamma area radiation monitors are positioned at selected locations in the confinement building. Typical alarm setting are less than 5 mrem/hr and adjusted as needed for non-routine activities, generally with the objective of identifying unusual changes in radiation conditions.
- (5) At the end of the term of the NBSR license the maximum tritium

concentration in the primary coolant is estimated to be 5 Ci/l. This value and reliable leak detection ensures that tritium concentrations in effluents shall be as low as is practicable.

(6) Removed to 3.7.2.

### 3.7.2 Effluents

Applicability: Annual releases

Objective: To minimize exposures to the public.

#### Specification

The reactor shall not be operated unless:

- (1) The total exposure from effluents from the reactor facility to a person at the site boundary shall not exceed 100 mrem per calendar year, less any external dose from the facility. The limit shall be established at the point of release or measurement using accepted diffusion factors to the boundary. For halogens and particulates with half-lives longer than 8 days, a reconcentration factor shall be included where appropriate.
- (2) An environmental monitoring program shall be carried out and shall include as a minimum the analysis of samples from surface waters from the surrounding areas, vegetation or soil and air sampling.

#### Basis

The criteria for determination of concentration limits specified above ensure that 10 CFR 20 (2007) limits are not exceeded at the site boundary. The allowance for dilution from the reactor building stack to the nearest site boundary is 1,000. This value of 1,000 from the diffusion view point is the minimum expected at the nearest site boundary under the least favorable meteorological conditions. This number could be increased by one or two orders of magnitude if normal variations in wind speed and direction were considered. Because these variations are not considered, a one or two order of magnitude margin is inherent in this limit.

In specifying the limits on particulates and long lived (longer than 8 days) halogens, consideration was given to the possibility of biological reconcentration in food crops or dairy products. Using available information (Soldat, J.D., Health Physics 9, p. 1170, 1963), a conservative (both the COMPLY and CAP88 codes indicate that 700 is at least an order of

magnitude higher than needed) reconcentration factor of 700 is applied. Thus, the limits for those isotopes are the Effluent Concentration Limits as specified in Appendix B, Table II of 10 CFR 20 (2007) multiplied by the 1,000 dilution factor divided by the 700 reconcentration factor; that is, 1.4 times the Effluent Concentration Limit.

For the purpose of converting concentrations to dose, the values of 10 CFR 20, Appendix B, Table 2 (2007), represent an annual dose of 50 mrem, except for submersion gases where they represent an annual dose of 100 mrem. It should be taken into consideration that the values for submersion gases are based on an infinite hemisphere geometry which is rarely achievable and therefore tends to overestimate the dose.

Area vegetation and soil samples are collected for analysis. Grass samples are collected during the growing season, April through September, and soil samples during the non-growing season, October through March. Thermoluminescent dosimeters or other devices also are placed around the perimeter of the NBSR site to monitor direct radiation. The continuation of this environmental monitoring program will verify that the operation of the NBSR presents no significant risk to the public health and safety. Since 1969, when the NBSR began routine power operation, the environmental monitoring program has revealed nothing of significance, thereby confirming that operation of the NBSR has had little or no effect on the environment.

A report published in March 2003 supports the findings of previous studies conducted on the hydrology and geology of the NIST site and vicinity. No significant changes in the hydro-geologic systems or ground water use were identified. This report further verifies the assumptions and techniques developed in 1964.

## 3.8 Experiments

### 3.8.1 Reactivity Limits

Applicability: Reactivity of experiments

Objective: To limit reactivity excursions.

#### Specifications

The reactor shall not be operated unless:

- (1) The absolute reactivity of any experiment shall not exceed 0.5%  $\Delta\rho$ .
- (2) The sum of the absolute values of reactivity of all experiments in the reactor and experimental facilities shall not exceed 2.6%  $\Delta\rho$ .

frequency is considered adequate to ensure that a significant deterioration in accuracy does not occur.

- (5) The primary tritium concentration can be carefully monitored by annual analysis of the primary water. All new water is tested prior to addition to the system. Operational experience and well established neutron activation principles provide a good basis for predicting tritium buildup in the primary. Increasing the sampling frequency after concentrations exceed 4 Ci/l will ensure that the tritium concentration limit is not exceeded.

#### 4.7.2 Effluents

Applicability: Environmental monitoring sampling program

Objective: To minimize radiation exposures outside of the confinement building.

##### Specifications

- (1) Water, and soil or vegetation samples shall be collected quarterly with the exception that grass samples are collected during the growing season, April through September, and soil samples during the non-growing season, October through March.
- (2) Thermoluminescent dosimeters shall be collected quarterly.
- (3) Air sampling shall be done quarterly.

##### Basis

- (1) Collecting and analyzing the water, and soil or vegetation samples on a quarterly basis will provide information that environmental limits are not being exceeded.
- (2) Collecting and analyzing the thermoluminescent dosimeters on a quarterly basis will provide information that radiation limits are not being exceeded.
- (3) Sampling the air on a quarterly basis will provide information that release limits are not being exceeded.

#### 4.8 Experiments

Applicability: Irradiation Experiments

Objective: To ensure that experiments conform to the limits of the specifications of Section 3.8.

- (c) Operation with a safety system setting for required systems less conservative than the Limiting Safety System Setting values.
- (d) Operation in violation of a Limiting Condition for Operation (LCO) established in the technical specifications unless prompt remedial action is taken as permitted by exception statements.
- (e) A reactor safety system component malfunction which renders or could render the reactor safety system incapable of performing its intended safety function. If the malfunction or condition is caused by maintenance, then no report is required.

Where components or systems are provided in addition to those required by the technical specifications, the failure of the extra components or systems is not considered reportable.

- (f) Any change in reactivity greater than one dollar (\$1.00) that could adversely affect reactor safety.
  - (g) An observed inadequacy in the implementation of either administrative or procedural controls, such that the inadequacy could have caused the existence or development of conditions which could result in operation of the reactor outside the safety limit.
  - (h) Abnormal and significant degradation in reactor fuel, cladding, coolant boundary, or confinement boundary (excluding minor leaks) where applicable.
- (2) There shall be a report submitted in writing within 30 days to the NRC, Document Control Desk, Washington D.C. 20555, of:
- (a) Permanent changes in the facility organization involving the Director, NCNR, or the Chief, Reactor Operations and Engineering.
  - (b) Significant changes in the accident analyses as described in the Safety Analysis Report.

## 6.8 Records

Records of this section may be in the form of logs, data sheets, or other retrievable forms. The required information may be contained in single or multiple records, or a combination thereof.

### 6.8.1 Records to be Retained for a Period of at Least Five Years or for the Life of the Component Involved if Less than Five Years

- (1) Normal reactor operation logs, not including supporting documents such as checklists and log sheets. (Supporting documents shall be retained for a period of at least one year.)
- (2) Principal maintenance activities.
- (3) Special Reports.
- (4) Surveillance activities required by these Technical Specifications.
- (5) Solid radioactive waste shipped off-site.
- (6) Fuel inventories and transfers.
- (7) Reactor facility radiation and contamination surveys where required by applicable regulations.

6.8.2 Records to be Retained for at Least One Operator Licensing Cycle

Records of retraining and requalification of licensed operations personnel shall be maintained for the period the individual is employed or until the license is renewed.

6.8.3 Records to be Retained for the Life of the Reactor Facility

Annual reports as described in the specifications of Section 6.7.1, to the extent the reports contain all of the required information, may be used as the record of the following:

- (1) Gaseous and liquid radioactive effluents released to the environs.
- (2) Off-site environmental monitoring surveys required by these Technical Specifications.
- (3) Radiation exposure for all personnel monitored.
- (4) Drawings of the reactor facility.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 9 TO

RENEWED FACILITY OPERATING LICENSE NO. TR-5

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

DOCKET NO. 50-184

1.0 INTRODUCTION

By letter dated July 12, 2012, as supplemented by letter dated May 14, 2013 (Agencywide Documents Access and Management System Accession Nos. ML12202A086 and ML13151A431), the National Institute of Standards and Technology (NIST) Center for Neutron Research (NCNR) submitted a license amendment request to change the Technical Specifications (TSs) for the National Bureau of Standards Reactor (NBSR). The requested amendment would change TSs 3.7, 4.7, and 6.8 pertaining to environmental sampling and records retention which clarifies environmental sampling procedures and record retention processes and improves the consistency of the amended TSs.

2.0 EVALUATION

The licensee states that this amendment is to correct inconsistencies in current TSs 3.7 and 4.7, that were introduced during the license renewal process, in governing the environmental sampling procedures. The need for clarification in the TSs is to improve consistency with the American National Standards Institute/American Nuclear Society (ANSI/ANS) standard 15.1, "Development of Technical Specifications for Research Reactors."

The licensee proposed an amendment to change TSs 3.7.1 and 3.7.2, which moves TS 3.7.1(6) and basis for TS 3.7.1(6) in its entirety, without any alternation in the content, from TS 3.7.1 to TS 3.7.2.

The moved TS 3.7.1(6) and basis (6), state the following:

Specification

- (6) An environmental monitoring program shall be carried out and shall include as a minimum the analysis of samples from surface waters from the surrounding areas, vegetation or soil and air sampling.

Basis

- (6) Area vegetation and soil samples are collected for analysis. Grass

samples are collected during the growing season, April through September, and soil samples during the non-growing season, October through March. Thermoluminescent dosimeters or other devices also are placed around the perimeter of the NBSR site to monitor direct radiation. The continuation of this environmental monitoring program will verify that the operation of the NBSR presents no significant risk to the public health and safety. Since 1969, when the NBSR began routine power operation, the environmental monitoring program has revealed nothing of significance, thereby confirming that operation of the NBSR has had little or no effect on the environment.

A report published in March 2003 supports the findings of previous studies conducted on the hydrology and geology of the NIST site and vicinity. No significant changes in the hydro-geologic systems or ground water use were identified. This report further verifies the assumptions and techniques developed in 1964.

After the incorporation of the information removed from TS 3.7.1(6), the amended TS 3.7.2 states the following:

#### Specifications

The reactor shall not be operated unless:

- (1) The total exposure from effluents from the reactor facility to a person at the site boundary shall not exceed 100 mrem per calendar year, less any external dose from the facility. The limit shall be established at the point of release or measurement using accepted diffusion factors to the boundary. For halogens and particulates with half-lives longer than 8 days, a reconcentration factor shall be included where appropriate.
- (2) An environmental monitoring program shall be carried out and shall include as a minimum the analysis of samples from surface waters from the surrounding areas, vegetation or soil and air sampling.

#### Basis

The criteria for determination of concentration limits specified above ensure that 10 CFR 20 (2007) limits are not exceeded at the site boundary. The allowance for dilution from the reactor building stack to the nearest site boundary is 1,000. This value of 1,000 from the diffusion view point is the minimum expected at the nearest site boundary under the least favorable meteorological conditions. This number could be increased by one or two orders of magnitude if normal variations in wind speed and direction were considered. Because these variations are not considered, a one or two order of magnitude margin is inherent in this limit.



In specifying the limits on particulates and long lived (longer than 8 days) halogens, consideration was given to the possibility of biological reconcentration in food crops or dairy products. Using available information (Soldat, J.D., Health Physics 9, p. 1170, 1963), a conservative (both the COMPLY and CAP88 codes indicate that 700 is at least an order of magnitude higher than needed) reconcentration factor of 700 is applied. Thus, the limits for those isotopes are the Effluent Concentration Limits as specified in Appendix B, Table II of 10 CFR 20 (2007) multiplied by the 1,000 dilution factor divided by the 700 reconcentration factor; that is, 1.4 times the Effluent Concentration Limit.

For the purpose of converting concentrations to dose, the values of 10 CFR 20, Appendix B, Table 2 (2007), represent an annual dose of 50 mrem, except for submersion gases where they represent an annual dose of 100 mrem. It should be taken into consideration that the values for submersion gases are based on an infinite hemisphere geometry which is rarely achievable and therefore tends to overestimate the dose.

Area vegetation and soil samples are collected for analysis. Grass samples are collected during the growing season, April through September, and soil samples during the non-growing season, October through March. Thermoluminescent dosimeters or other devices also are placed around the perimeter of the NBSR site to monitor direct radiation. The continuation of this environmental monitoring program will verify that the operation of the NBSR presents no significant risk to the public health and safety. Since 1969, when the NBSR began routine power operation, the environmental monitoring program has revealed nothing of significance, thereby confirming that operation of the NBSR has had little or no effect on the environment.

A report published in March 2003 supports the findings of previous studies conducted on the hydrology and geology of the NIST site and vicinity. No significant changes in the hydro-geologic systems or ground water use were identified. This report further verifies the assumptions and techniques developed in 1964.

The proposed revisions to TS 3.7.1 involve the removal of TS 3.7.1(6) and its associated basis in its entirety to TS 3.7.2 without altering the substance of the TS requirements. The Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's requested changes. The NRC staff finds that these changes are editorial in nature and does not affect facility safe operations. Because they are editorial in nature and do not change the requirements of the TSs, they are acceptable to the NRC staff.

The licensee also requested to modify TS 4.7.2(1) and its basis. The current TS 4.7.2(1) and the corresponding technical basis state:

Specifications

- (1) Water, soil, and vegetation samples shall be collected quarterly.

Basis

- (1) Collecting and analyzing the water, soil and vegetation samples on a quarterly basis will provide information that environmental limits are not being exceeded.

The licensee requested to change these specifications and basis to the following:

Specifications

- (1) Water, and soil or vegetation samples shall be collected quarterly with the exception that grass samples are collected during the growing season, April through September, and soil samples during the non-growing season, October through March.

Basis

- (1) Collecting and analyzing the water, and soil or vegetation samples on a quarterly basis will provide information that environmental limits are not being exceeded.

The change returns sampling methodology to that used prior to the July 2009 license renewal.

With respect to the change requested to TS 4.7.2(1), it will make the change applicable to grass growing and non-growing seasons rather than generally use quarterly sampling procedures to cover both vegetation and soil samples. The licensee stated that this change is consistent with the current TS 3.7.1(6) basis (that will be relocated to TS 3.7.2) and is consistent with the licensee's past four decades of sampling practices under the NBSR environmental monitoring program. The NRC staff has reviewed the licensee's requested changes and agrees with the licensee's assessment that collecting dead grass to determine radionuclide uptake would not make scientific sense since during the non-growing season, dead grass is not up-taking anything from soil and during this time soil samples would be better indicators reflecting potential environmental impact. With the above considerations, the NRC staff agrees that the TSs will continue to require acceptable collection of environmental samples and it does not affect facility safe operations, so therefore, the change is acceptable.

The licensee proposed to modify the information that is currently under TS 6.8.1 regarding record retention.

The current TS 6.8.1 states:

6.8 Records

6.8.1 Records to be Retained for a Period of at Least Five Years or for the Life of the Component Involved if Less than Five years

Records of this section may be in the form of logs, data sheets, or other retrievable forms. The required information may be contained in single or multiple records, or a combination thereof. Annual reports as described in the specifications 6.7.1, to the extent the reports contain all of the required information, may be used as a record of the following:

- (1) Normal reactor operation logs, not including supporting documents such as checklists and log sheets. (Supporting documents shall be retained for a period of at least one year.)
- (2) Principal maintenance activities.
- (3) Special Reports.
- (4) Surveillance activities required by these Technical Specifications.
- (5) Solid radioactive waste shipped off-site.
- (6) Fuel inventories and transfers.
- (7) Reactor facility radiation and contamination surveys where required by applicable regulations.

And the current TS 6.8.3 states:

6.8.3 Records to be Retained for the Life of the Reactor Facility

- (1) Gaseous and liquid radioactive effluents released to the environs.
- (2) Off-site environmental monitoring surveys required by these Technical Specifications.
- (3) Radiation exposure for all personnel monitored.
- (4) Drawings of the reactor facility.

The licensee requested that the introduction to TS 6.8.1 to be divided into two parts: one part goes directly under section 6.8 and the other part goes to section 6.8.3. With the modification, TS 6.8 (with no changes to TS 6.8.2) will be changed to:

## 6.8 Records

Records of this section may be in the form of logs, data sheets, or retrievable forms. The required information may be contained in single or multiple records, or a combination thereof.

### 6.8.1 Records to be Retained for a Period of at Least Five Years or for the Life of the Component Involved if Less than Five years

- (1) Normal reactor operation logs, not including supporting documents such as checklists and log sheets. (Supporting documents shall be retained for a period of at least one year.)
- (2) Principal maintenance activities.
- (3) Special Reports.
- (4) Surveillance activities required by these Technical Specifications.
- (5) Solid radioactive waste shipped off-site.
- (6) Fuel inventories and transfers.
- (7) Reactor facility radiation and contamination surveys where required by applicable regulations.

### 6.8.3 Records to be Retained for the Life of the Reactor Facility

Annual reports as described in the specifications of Section 6.7.1, to the extent the reports contain all of the required information, may be used as the record of the following:

- (1) Gaseous and liquid radioactive effluents released to the environs.
- (2) Off-site environmental monitoring surveys required by these Technical Specifications.
- (3) Radiation exposure for all personnel monitored.
- (4) Drawings of the reactor facility.

The NRC staff notes that these are “may” statements which denote permission, not a requirement or a recommendation. With this rearrangement, the recordkeeping form requirements now apply to the entire section of TS 6.8 rather than only to TS 6.8.1 as it is currently stated. All the requirements currently listed under TS 6.8.3 may be recorded in annual reports which are now specified as the records that may be retained for the life of the reactor facility. It clarifies not only the required records to be retained under 6.8.3 but also the way these records may be recorded, i.e., through facilities’ annual reports submitted to the NRC. The NRC staff agrees with the licensee’s assessment that this change allows annual report summaries of total radioactive material releases to the environment or total personnel radiation exposure to replace the raw data used to produce those summaries and it is more in line with ANSI/ANS 15.1 recommendation. The changes are acceptable to the NRC staff.

In summary, the NRC staff concludes that the requested changes clarify the facility TSs regarding environmental sampling practices and record keeping processes. These changes will not have a significant impact on facility safe operations therefore, the NRC staff finds them acceptable. The NRC staff also concludes that the TS changes will not reduce the facility’s capability to detect and respond to radioactive material fallout and/or leakage during an unplanned release or a maximum hypothetical accident. Further, it will not increase the likelihood or consequences of any event. Finally, the proposed changes will not change the actual facility environmental sampling and recordkeeping procedures and practices. Based on the foregoing analysis, the NRC staff concludes that the requested amendment will not change reactor operations or environmental monitoring procedures and requirements, and involves no undue risk to the health and safety of the public or the environment.

### 3.0 STATE CONSULTATION

In accordance with the Commission’s regulations, the Maryland State official was notified of the proposed issuance of the amendment. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves NIST facilities’ TS changes involving its environmental sampling and recordkeeping procedures. The NRC staff has determined that this amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on June 25, 2013 (78 FR 38083). Accordingly, the requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of this amendment.

### 5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be

conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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