



# ANNUAL RADIATION SAFETY REPORT

2017

*Environmental Health and Safety Department*  
Nova Southeastern University | 7501 SW 36th Street, Davie, FL 33314

# *Annual Radiation Safety Report*

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## ***From the Radiation Safety Officer***

This report serves as annual review of the NSU radiation safety program content and implementation as required by 10 CFR 20.1101(c).

The report summarizing the personnel monitoring program along with materials received and material disposal. The Radiation Safety Committee (RSC) held three (3) meetings in 2017. Dr. Michelle Clark serves as the chair of the RSC which has a total of 6 members.

The Radiation Safety committee reviewed the radiation safety plan and made minor edits.

**Beth Welmaker | Director EHS, RSO**

***Table of Contents***

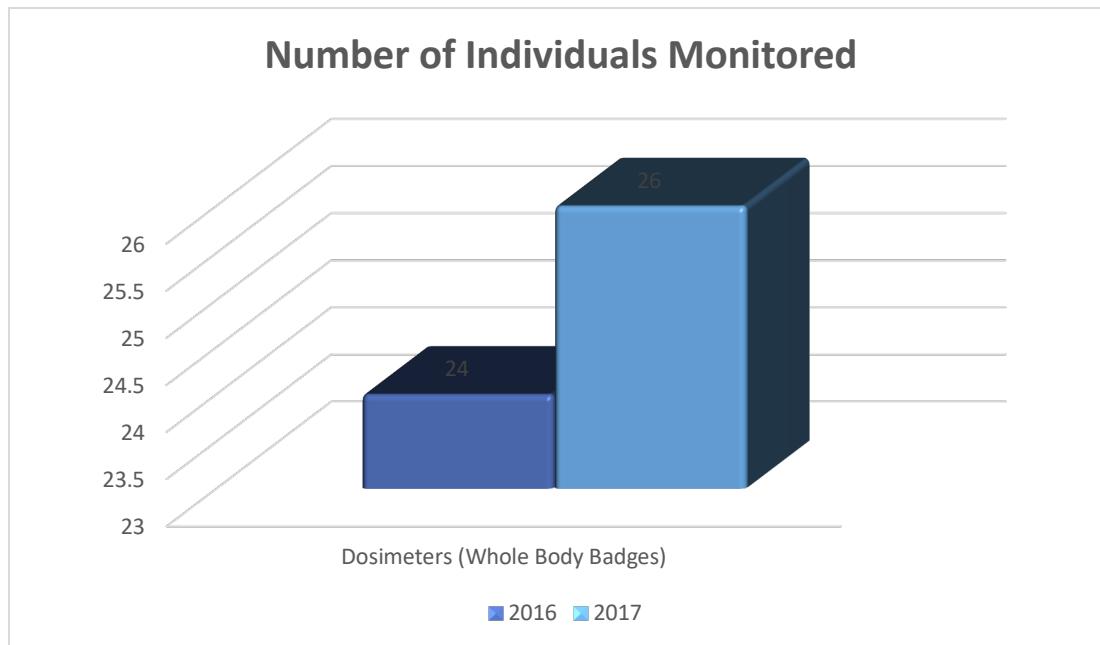
<b>From the Radiation Safety Officer .....</b>	<b>1</b>
<b>Personnel Monitoring.....</b>	<b>3</b>
<b>Inspections In 2017 .....</b>	<b>4</b>
<b>Radioactive Materials Received in 2017 .....</b>	<b>5</b>
<b>Radioactive Waste Generation and Disposal.....</b>	<b>6</b>
<b>Radiation Use Authorizations .....</b>	<b>7</b>
<b>Significant Occurrences in 2017 .....</b>	<b>8</b>

## Personnel Monitoring

During 2017, twenty-six (26) whole body dosimeters were issued to Nova Southeastern University staff and students. Quarterly exposure determinations were sent to each person issued a dosimeter. There was 1 individual enrolled in the fetal/pregnancy dosimetry program during 2017; with no exposure recorded.

Nova Southeastern University limits [500 mrem/yr whole body, (5000 mrem/yr to extremities/skin and 1500 mrem/yr eyes)] for investigating exposures is ten percent of the applicable federal limit [5000 mrem/yr whole body (50,000 mrem/yr extremity/skin and 15,000 mrem/yr eyes)]. Dosimetry results in 2017 showed that the maximum whole body deep dose received by any one individual was 3 mrem (<1% of the NSU investigation limit, <1% of the federal limit).

In 2017, no thyroid bioassays were performed to assess potential intake from  $^{125}\text{I}$ . No urine bioassays were conducted to assess the potential intake of beta emitting radionuclides.



**Personnel exposures remain low and in compliance with NSU ALARA policy. No employees exceeded the limits in 2017**

### ***Inspections In 2017***

During 2017, EHS performed 8 quarterly inspections of radioactive use spaces and 7 inspections of the waste room where RAM is stored for decay. The RAM waste room was established in late spring. No RAM entered the space until the summer when monthly inspections began. Due to hurricane Irma, only a visual inspection took place. There were no elevated readings and all waste has been maintained in a secure manner.



***Radioactive Materials Received in 2017***

The table provided below summarizes use of the radioactive material at NSU and the number of orders received and the approximate activity.

Radionuclide	Number of Orders	Activity (mCi)
<sup>3</sup> H	2	0.5
<sup>14</sup> C	0	0
<sup>35</sup> S	1	1
<sup>32</sup> P	0	0
<sup>125</sup> I	8	7.46
<sup>51</sup> Cr	0	0
<sup>99m</sup> Tc	0	0
<sup>57</sup> C	0	0
<b>Totals</b>	<b>11</b>	<b>8.96*</b>

*\*Radioactive activity for each isotope listed in the above table is below the limits established by the NSU License.*

### ***Radioactive Waste Generation and Disposal***

In March 2017, a radioactive waste shipment was performed by Chase Environmental Group. The following materials were shipped off site:

- One supersack with liquids containing I-125; total package activity approximately 7.86E+01 MBq. (Non DOT Regulated Material)
- One supersack with DAW containing I-125; total package activity approximately 8.14E+00 MBq (Non DOT Regulated Material)
- One drum with sources containing I-129; Ba-133; total package activity 2.96E-03 MBq (Non DOT Regulated Material)

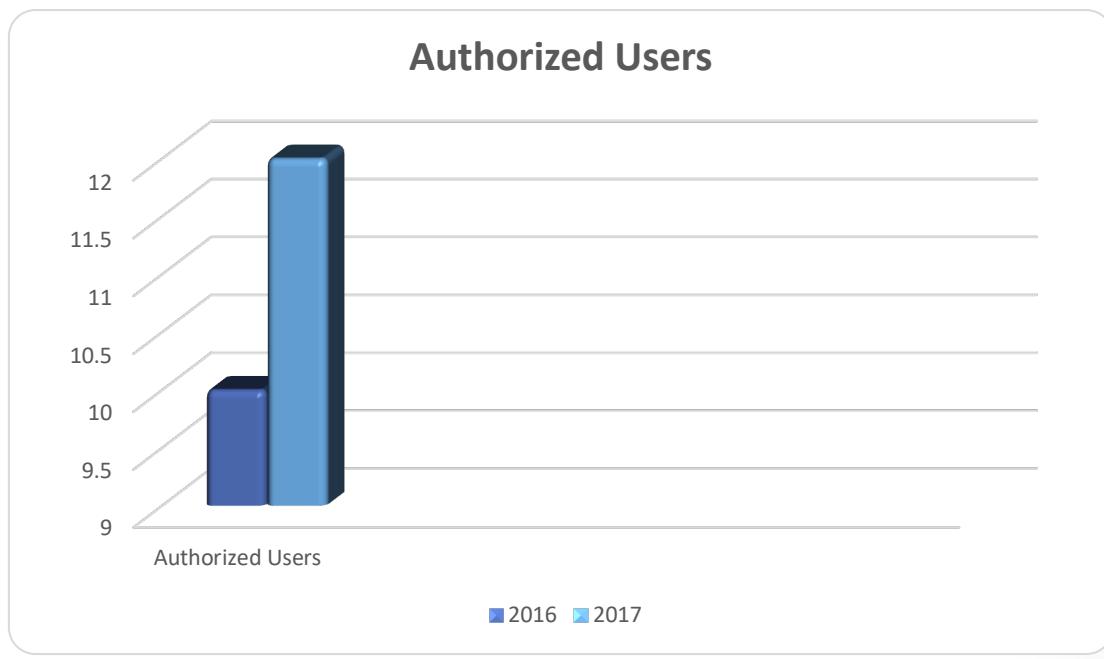
In spring of 2017, a waste storage room was opened in the Center for Collaborative Research. The space was set up to store radioactive material for decay. This will result in a disposal cost reduction for 2018 as well as the ability to bulk long-lived dry active waste for more cost-effective disposal off site.

### ***Radiation Use Authorizations***

In 2017 the NSU Radioactive Materials License was amended to include two (2) additional authorized users:

- Dr. Shannon Murray
- Dr. Adil Doganay Duru

There are no Radiation Use Authorizations in the process of being renewed or awaiting approval.



### ***Significant Occurrences in 2017***

1. License was amended to include CCR labs, CCR waste room and to transfer RSO to Beth Welmaker.
2. The Bureau of Radiation Control filed incident report during March 8, 2017 waste collection inspection. A response letter was sent to the FL BRC and no follow-up actions were required.