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***Operation and Maintenance of the National  
Radiobiology Archives***

***May 1, 2009 – April 30, 2010***

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Submitted by:

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on behalf of

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## Executive Summary

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The National Radiobiology Archives (NRA) was operated for the U. S. Department of Energy Office of Biological and Environmental Research (SC-72) by the Washington State University (WSU) College of Pharmacy (COP). This report covers the period May 1, 2009 through April 30, 2010, e.g. FY2010.

The National Radiobiology Archives (NRA) are an archival program, started in 1989, to collect, organize and maintain data, laboratory notebooks, and animal tissue specimens from government (Department of Energy and its predecessor agencies) sponsored radiobiology life-span animal studies. These unique records, histopathology slides and paraffin embedded tissue blocks are maintained in a central facility and are available for further research study. The materials include electronic and paper records for each of more than 6,000 life-span-observations on dogs as well as details of major studies involving nearly 30,000 mice. Although these studies were performed over many years and at different laboratories with differing data management systems, the NRA has translated them into a standardized set of relational database tables. These can be distributed to interested individuals on written request.

The financial support of Washington State University (WSU)/USTUR for the maintenance of the materials in the NRA ended in FY2009. The NRA was operated by the USTUR on a no-cost extension May 1, 2009 – April 30, 2010. However, WSU continued to maintain the NRA through this period, at no cost to DOE, in active collaboration with the Pacific Northwest National Laboratory's (PNNL) Low Dose Research Program. At the direction of Dr. Noelle Metting, DOE Office of Science (SC-72), the NRA materials (consisting of hard copy documents, paraffin embedded specimens, and pathology slides) were transferred from the USTUR laboratory in Richland, WA to Professor Gayle E. Woloschak, Northwestern University (NWU), Departments of Radiation Oncology, Radiology, and Cell and Molecular Biology, Chicago, IL. To learn more about NWU's Beagle Dog Tissue Archive visit: [http://janus.northwestern.edu/dog\\_tissues/](http://janus.northwestern.edu/dog_tissues/).

On December 2, 2010, Ms. Annette Black, DOE Record Transfer and Retrievals Officer, was informed about NRA materials translocation.

## A. Specific Aims

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### 1. To Maintain the Archive of Written Records from the Animal Experiments

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The USTUR continued to maintain the NRA archives which consist of approximately 175 storage boxes containing laboratory notebooks, animal exposure records, animal pathologic records, and radiographs. These were stored in a 6,000 square foot leased facility in Richland, WA. Additionally, through a collaboration with Pacific Northwest National Laboratory's (PNNL) Low Dose Program, many of these records were scanned into digital files. These totaled 34 GB of data, which are saved in 2,407 separate PDF files that are organized by box number and animal identification number.

### 2. To Maintain the Archive of Animal Tissues at Washington State University

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The USTUR continued to house the NRA dog tissue collection in the leased facility. The NRA tissue collection consisted of pathology slides and tissue blocks. Approximately 25% of the laboratory facility was dedicated to the storage of the NRA materials.

### 3. To Organize the Datasets of These Animals in the Context of Other Datasets so That They Can be Used by the Scientific Community at Large

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As was reported in the FY2009 NRA progress report, Dr. Chuck Watson (NRA Database Consultant) completed his service as the US representative on the European Radiobiological Archives (ERA) Advisory Board during FY2009. Unfortunately, due to the lack of financial support during FY2010, the NRA was not able to make further contributions to the ERA's efforts.

## B. NRA Data Requests

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From September 2009, PNNL has provided a half-time graduate student to organize and catalog the NRA beagle study data and tissue materials that were generated during the 1960s. During FY2010, this WSU Environmental Sciences student initiated a study that employed a combination of histopathological stains and autoradiography to study the microdistribution of plutonium nitrate in the lungs of a USTUR Registrant and beagle dogs.