



OFFICE OF LABORATORY ANIMAL CARE

# Operating Guidelines

<b>OG Number:</b>	<b>701</b>	<b>Dr. Gem Digital Radiograph Machine</b>	<b>Revision #:</b>	<b>0</b>
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## Procedures

1. All users must first go through radiation safety training and be listed in the Radiation Use Authorization (RUA). All users will be trained and added to the RUA prior to using the Dr. Gem x-ray machine.
2. Safety
  - a. Close both doors to NAF 113B when operating any radiation producing machine (RPM).
  - b. All operators will wear the assigned dosimeter.
  - c. All operators will stand behind the lead wall OR don all appropriate PPE
    - Lead apron
    - Lead gloves
    - Thyroid shield
    - Lead safety glasses
  - d. Ignition of image producing radiation will be done by using the remote switch located in the lead protected operator booth.
  - e. The machine is secured behind locked doors and available only to the personnel listed in the RUA.
3. Producing images
  - a. Engage the main breaker switch located on the right wall of the operator cubicle to the "ON" position.
  - b. Turn the secondary power transducer on; located on the North wall of the operator cubicle.
  - c. Wait for the computer and LCD monitor to power up and follow software instructions.
  - d. Follow "Detailed Digital Radiograph Machine Usage"

Last Updated: 0/00/00

- Turn on all components in order:
  - Main transformer (Box 1) in control room
  - Transformer kill switch (Box 2) in control room
  - Computer on floor to right of x-ray table and under the monitor in the control room.
  - Control console to right of x-ray tube
- Once Windows has started, click on the VXvue icon on the desktop or select it from the Programs list in the Start Menu.
- Select user 'viewworks' (default setting)
- Password: **viewworks**
- To perform a new study:
  - Select unscheduled from the tab on the top of the screen.
  - Enter the PI's name as the Last Name
  - Enter the patient's name or unique ID under Patient ID.
  - Enter the Sex and Age of the patient if known.
  - Click Start Study
  - Choose the appropriate species
  - Select the appropriate Anatomic Region to the left of the image.
- To add an additional image:
  - Select additional regions to the left of the image
- Once patient is positioned, take the radiograph using
  - Foot pedals in the control room:
    - first step on Ready and then on X-ray so that both are depressed at the same time until you hear a beep, or
    - The handheld clicker in the x-ray room. Lead aprons/gloves/thyroid protection must be worn in using clicker in x-ray room. Click cord will reach to control room and can be used from there.
  - Close the study to save it into the database.
- To view previously taken images:
  - Select Database from the options on the right of the screen.
  - Select the date range and click Search.
- To transfer images to a portable drive (USB stick, flash drive):
  - Insert portable device into USB port located on front of computer tower in control room.
  - Select the study of interest from the Database menu on the right side of the screen.
  - Once the image has been selected, click on Export Image on the top of the screen.
  - Click the type of file to export from the pop-up menu. (usually DICOM or JPEG)
  - Select folder destination.
  - Press start

- Turn off all components in the reverse order:
  - Computer (Select Shut Down from Start Menu)
  - Control console to right of x-ray tube
  - Transformer kill switch (Box 2) in control room
  - Main transformer (Box 1) in control room
- 4. Accident procedures
  - a. Notify Radiation Safety immediately of any of the following situations:
    - An interlock failure
    - Unexpected personnel exposure
    - Airborne radioactivity
    - Loss of control, unauthorized use or theft of radiation machines
  - b. In the event of an exposure
    - Shut down and secure the machine then call the appropriate agency.
    - During business hours: call EH&S main line at 510-642-3073
    - After hours and on the weekends: call UCPD 510-642-3333
    - Await further instructions from EH&S Radiation Safety on how to proceed.
- 5. Hazards
  - a. Isoflurane anesthetic gas is used to keep subjects anesthetized during the imaging process.
  - b. If the DrGem does not power up or operate as directed, cease all use and contact the service provider. (TRIUS Inc. 510-887-2140)
- 6. Maintenance and removal
  - a. All machine repairs will be performed by qualified personnel.
    - Interlocks will be tested, and radiation leakage surveys will be performed before returning the machine to service.
    - Beam alignment operations require specific authorization and/or supervision by EH&S.
  - b. Machines that are moved from their current approved location require prior notification to EHS&S to verify that the new location is appropriate for use and change of registration with the State of California.
  - c. Transfer, sale, or disposal of machines to another user or institution similarly requires notification to the State of California within 30 days.

REVISION HISTORY			
REVISION NUMBER	AUTHOR(S)	EFFECTIVE DATE	REVISION(S)