



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF COMMUNITY HEALTH  
LANSING

JANET OLSZEWSKI  
DIRECTOR

March 4, 2008

Scott Malick, M.D.  
Director of Mammography Services  
William Beaumont Hospital – Troy  
44201 Dequindre  
Troy, Michigan 48098

Mammography Facility Registration Number: 5802

Dear Doctor Malick:

The Radiation Safety Section examined the mammography facility at the above address on January 31 through February 4, 2008, to determine compliance with the *Ionizing Radiation Rules* of the State of Michigan, applicable radiation statutes, and the federal Mammography Quality Standards Act (MQSA). Results of the state inspection are presented below. Preliminary results of the MQSA inspection were left with the facility at the time of the inspection. An updated report is enclosed.

**The results of the examination are presented below. Items of noncompliance with the rules are numerically designated.**

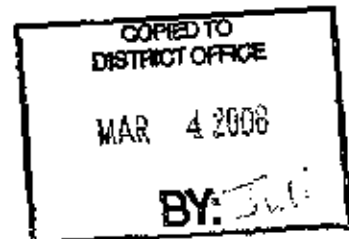
**DCH Machine Registration Number X47290, Room 201**

1. **Rule 660.** The mammography phantom image did not visualize all of the 4 largest fibers, all of the 3 largest speck groups, and all of the 3 largest masses.

**DCH Machine Registration Number X45079, Room 208**

2. **Rule 652(3).** The automatic exposure control system did not maintain image optical density to within  $\pm 0.2$  of the average as the kVp was varied within the clinically employed range and as attenuator thickness was varied from 2 to 6 centimeters for each clinically employed kVp.
3. **Rule 663(4).** Compression in the manual and powered modes was not checked at least semiannually.

Based on a review of documentation, it was noted that the last compression test was conducted in March 2007.



### Radiation Physicist Annual Consultation

4. **Rule 632(1).** The mammography facility did not have a qualified radiation physicist provide an on-site consultation to the facility on at least an annual basis.

The GE DMR + mammography system, DCH Machine Registration Number X45079, was not examined by a qualified radiation physicist at least annually. Based on a review of documentation, it was noted that more than 365 days passed between the August 8, 2006, evaluation and the August 27, 2007, evaluation.

Also based on a review of documentation, it was also noted that more than one year passed between the November 2006 and the January 2008 screen speed uniformity tests.

### Patient Radiation Dose Information

Our survey of the mammography equipment also included determination of patient radiation dose using technique settings used for an average-size, average-density breast. The half-value layers in millimeters of aluminum, patient skin entrance exposures in milliroentgens (mR), and estimated mean glandular doses in millirads are presented below:

<u>Room</u>	<u>Machine Reg. No.</u>	<u>kVp</u>	<u>Density Setting</u>	<u>Resultant mAs</u>	<u>Half-value Layer</u>	<u>Entrance Exposure</u>	<u>Mean Glandular Dose</u>
Room 201	X47290	26	0	85	0.33	744	125
Room 202	X48289	25	0	111	0.29	1152	171
Room 203	X56019	26	0	125	0.37	940	179
Room 204	X61808	27	0	72.9	0.34	822	146
Room 205	X56095	26	0	125	0.39	892	178
Room 208	X45079	26	0	94	0.33	849	143
Room 208 Stereotactic	X59503	27	NA	90	0.31	840	134

**Image Quality Information**

Images of an RMI Model 156 mammography phantom were evaluated. At a minimum, a mammography system must be able to image the 4th fiber (0.75 mm), the entire 3rd group of specks (0.32 mm), and the 3rd mass (0.75 mm). The phantom images obtained using the normal technique settings referenced above permitted visualization of the following:

<u>Room</u>	<u>Machine Reg. No.</u>	<u>Fibers</u>	<u>Groups of Specs</u>	<u>Masses</u>	<u>Optical Density</u>
Room 201	X47290	4.5	4.0	2.5	1.86
Room 202	X48289	5.5	4.0	4.0	2.06
Room 203 (Soft Copy)	X56019	5.5	4.0	3.5	NA
Room 203 (Hard Copy)	X56019	5.5	4.0	3.5	NA
Room 204 (Soft Copy)	X61808	5.5	4.0	4.5	NA
Room 204 (Hard Copy)	X61808	5.5	4.0	4.5	NA
Room 205 (Soft Copy)	X56095	5.5	4.0	3.5	NA
Room 205 (Hard Copy)	X56095	5.5	4.0	3.5	NA
Room 208	X45079	5.5	4.0	4.0	1.74
Room 208 (Stereotactic Digital Image)	X59503	6.0	4.0	4.5	NA

Please refer to the *Mammography Inspection Data Sheet* for a detailed analysis of the mammography machine checks and information concerning quality assurance.

**Response**

Written notice of corrective action for the indicated items of noncompliance is requested by April 15, 2008.

For your convenience, a notification form is enclosed which can be filled in, signed, and returned to indicate completion of corrective action. Please be sure to **indicate the facility registration number** in correspondence.

For your information, items of noncompliance are subject to reinspection with possible assessment of a reinspection fee. A timely notice of corrective action, however, may be accepted by the Department in lieu of such a reinspection and fee.

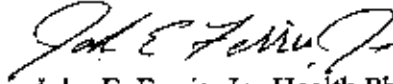
An invoice for the mammography machine inspection fee is enclosed. Payment of the fee is now due.

Please share this report with the Radiation Protection Supervisor, Cheryl Culver Schultz, M.S.



Should there be any questions regarding this report or if we can be of further assistance in radiation protection matters, please contact us at (586) 446-0200.

Sincerely,



John E. Ferris, Jr., Health Physicist  
Radiation Safety Section  
Division of Health Facilities & Services  
E-mail: [jeferris@michigan.gov](mailto:jeferris@michigan.gov)  
Website: [www.michigan.gov/rss](http://www.michigan.gov/rss)

Enclosures: *MQSA Facility Inspection Report*  
*Mammography Inspection Data Sheet (7)*  
Notification Form  
Inspection Invoice