

STANDING OPERATING PROCEDURE

1. ORGANIZATIONAL ELEMENT: RIA-Laboratory-9320		2. SOP NO: 9320-30	3. REV:	4. DATE: 14 Jan 65	5. PAGE OF 2 3
6. SUBJECT: Safety Requirements and Operating Procedures for Norelco K-Ray Diffractometer		7. FORMS:			
8. REFERENCE:					
9. INDIV. OR ORGV. NO.	10. ORGANIZATIONAL RESPONSIBILITY	11. STEP NO.	12. OPERATION/STEP DESCRIPTION		
			<p>7. Operators must read and comply with Handbook #76 "Medical X-ray Protection Up to Three Million Volts" by the National Bureau of Standards and the "Instruction Manual" by the manufacturer - Philips Electronic Instruments Co.</p> <p>8. No one shall be allowed to repair, alter, or adjust internal components of this equipment unless supervised by a qualified laboratory person so designated by laboratory supervision.</p> <p style="margin-left: 20px;">a. As far as possible, repair work must be conducted with the power disconnected and high potential stored in a condenser shorted out with the proper grounding terminal.</p> <p style="margin-left: 20px;">b. When necessary to test and repair with high voltage on, one hand must be kept in the pocket and one other person must be in constant attendance.</p> <p style="text-align: center;"><u>Operating Procedure</u></p> <ol style="list-style-type: none"> 1. Open valve for cold water cooling. (After X-rays are on check for water flow). 2. Turn on switch marked main power supply (on lower part of detector panel). 3. Wait thirty seconds, push in overvoltage reset holding it down several seconds. Left side meter on D.C. Power Supply should read to right of red line. 4. Turn line toggle switch on. 5. Wait one minute, push black "Start" button (on power unit). 6. Wait one minute, meter on right side of D.C. Power Supply should read on red line (adjust if necessary after fifteen minutes of operation). 7. With gears disengaged set goniometer to selected low angle. 8. Start chart drive (with toggle switch on recorder). Note inking of pens. Stop chart with pen exactly on one of heavy chart lines. 9. Turn on X-rays by pushing black X-ray "On" button. 10. Check for stray radiation. 11. Simultaneously turn on goniometer gear lever and chart drive toggle switch. Open sliding shutter at X-ray window near goniometer. 12. Check for stray radiation. 		
13. SUBMITTED BY:		14. APPROVED BY:			

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			<p>13. Record operating conditions, starting angle, sample information and date near starting position of chart.</p> <p>14. Operating with camera only</p> <ul style="list-style-type: none"> a. Shut off line toggle switch on goniometer. b. Shut off line toggle switch on DC Power Supply panel. c. Select correct filter for target material. <ul style="list-style-type: none"> 1. For copper target use 0.0158 mm nickel. 2. For iron target use 0.0151 mm manganese. 3. For chromium target use 0.0153 mm vanadium. d. Align camera and specimen. e. Move camera very close to X-ray port and lock in position. f. Turn on X-rays by pushing black X-ray "On" button. g. Check for radiation leakage. <p>15. Shut Down.</p> <ul style="list-style-type: none"> a. Push red X-ray "Off" button. b. Push red Rectifier "Stop" button. c. Close water valve. d. Shut off line toggle switch on detector unit. e. Shut off main power supply switch on detector unit. f. Close slide gate at X-ray window near goniometer. 			
<p>CONCURRENCE:</p> <div style="text-align: center; margin: 10px 0;">  STANLEY L. EISLER Radiological Safety Officer </div> <div style="text-align: center; margin: 10px 0;">  JOHN O. LEFEVER Safety Director </div>						
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