

## SAFE WORK PROCEDURE

# **BOILER WATER TEST**

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LOCATION OF WORK:	WRITTEN BY:	APPROVED BY:	DATE:	LAST REVISION:
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HAZARDS PRESENT	PERSONAL PROTECTIVE EQUIPMENT (PPE)	ADDITIONAL REQUIREMENTS
<ul> <li>Chemical burns</li> <li>Splash</li> <li>Inhalation of fumes</li> <li>High pressure water system</li> <li>Excessive noise – hearing damage</li> </ul>	<ul> <li>Nitrile gloves</li> <li>Chemical apron</li> <li>Safety glasses</li> <li>Long sleeve clothing</li> <li>Spill kit</li> <li>Safety footwear</li> <li>Hearing protection</li> </ul>	<ul> <li>WHMIS training</li> <li>Boiler system training</li> <li>5<sup>th</sup> Class Power Engineer</li> </ul>

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HAZARD: THE SYSTEM IS UNDER HIGH PRESSURE165-300 PSI. FAILURE TO FOLLOW THE STEPS OULINED BELOW WILL RESULT IN BURNS TO THE FACE AND UPPER BODY OR PERMANENT EYE DAMMAGE.

## PROCEDURE:

- 1. You must perform a boiler water test twice a week. On those days you will also add chemicals to treat the water.
- 2. Don all personal protective equipment including the following: long sleeve shirt, face shield/safety glasses, nitrile gloves, and safety footwear.
- 3. Assemble all equipment required for this task: MO buffer, MO indicator, flask or beaker, etc.
- 4. Start by taking a 50 ml sample of boiler water from the gage glass.
- 5. Let it cool to room temperature.
- 6. Add 2ml of MO Buffer to the sample and wait a minute
- 7. Add 1 scoop of MO Indicator to the sample and swirl it around to mix, it. the solution will turn blue.











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- 8. Add MO titrant one drop at a time. You must count the number of drops it takes to change the colour of the solution from blue to light yellow.
- 9. Multiply the number of drops used by 5. Enter the total in your log book. For example: If it took 18 drops to change the colour from blue to light yellow then 18 X 5 = 90. In this case you would enter 90 in the log book. The optimum range is 60-100ppm. Final count must be in this range.
- 10. You must add Optiguard twice a week to the boiler according to GE Betz guideline.
- 11. Follow the safe work procedure for adding chemical to the boiler pot feeders



### **SPILL CLEAN UP:**

- 1. Notify the divisional safety officer.
- 2. In the event of a spill or splash onto skin or clothing, immediately run affected area under water for a minimum of 15 minutes. If splashed onto clothing, run under water and remove, continue to wash the affected area for 15 min. Notify your supervisor immediately and seek medical attention.
- 3. Don all personal protective equipment and obtain the school spill kit.
- 4. In the event of a spill onto piping/flooring:
  - a) Sprinkle Spill King over the affected area, if on floor. Allow to absorb.
  - b) Use a brush to move the absorbent back and for over the area until it is fully absorbed.
  - c) Sweep up into a Biohazard bag and seal.
  - d) Wash the affected are with clean water.
  - e) Rinse all items used to clean up the spill with water and dry.
- 5. If any equipment/piping have been sprayed with chemical:
  - a) Use a water saturated wet paper towel to dilute and rinse the affected areas until no chemical remains.
  - b) Dry with paper towels.
  - c) Discard all waste into the biohazard bag.
- 6. Dispose of waste as hazardous waste and send to the hazardous waste storage at Facilities & Operations.
- 7. Wipe down chemical apron and face shield with clean water and hang to dry. Rinse chemical resistant gloves with clean water and hand to dry. Wash hands and face with clean water and dry with paper towels.
- 8. Refill any spill kit items that have been used. Refill items can be obtained from the divisional safety officer.

## REGULATORY REQUIREMENTS

- WS&H Act W210, Section 4, 5, 7, 7.1
- Mb. Regulations 217/2006.
  - o Part 2. Safe Work Procedures
  - o Part 35, WHMIS
  - o Part 36, Chemical Biological Substances
- MO Buffer & MO Indicator Instructions for use