How Safe is Your Plant?

The first issue of "How Safe is Your Plant" was distributed during 2004/2005 and was seen as an interesting and valuable communication by Ontario’s registered plant owners and operators.

This revised issue reinforces the original messages in that the Owners and Chief Engineers/Operators are responsible for the safe management, operation and maintenance of their registered plants.

The safe management, operation and maintenance of Ontario’s registered Power Plants is the foundation of the Operating Engineers Regulation.

The two most essential components of safe plant operation are reflected in the knowledge and competence of the operating personnel, and the effective operation of the safety controls and devices.

Responsibility for a plant’s safe operation, and its compliance with the Regulation always starts with people.

In guarded unattended plants, the owner/user is responsible for ensuring the plant complies with the Regulation. In guarded attended and full attendance plants, the Chief Operating Engineer/Operator and related certified staff are an extension of the Regulation and as such, under the law are responsible for compliance.

An additional but important member of the plant’s team safety effort is the TSSA Power Plant Inspector.

In addition to the responsibility for enforcing the Regulation, the Inspector is a key resource for the Owner and Chief Engineer/Operator in their efforts to provide a safe and effective plant operation. One of the Inspector’s most important responsibilities is periodic inspections of registered plants. Clearly, no Owner or Chief Engineer/Operator wants to operate a plant that presents a risk. Therefore, Inspector’s efforts are an important extension of your plant’s operating team with the goal of providing you with the guidance to reinforce your overall effort to reduce risk.

Because most Operating Engineers and Operators spend their working lives without experiencing an incident or serious plant failure, it is easy to assume there are no risks and that modern equipment is fail proof.

The fact is however, that power plants present significant potential for high risk.

In order to understand the risk potential, it is necessary to take a broad overview of the industry and the Power Engineering profession.

To this end, we present two overviews of the profession that provide non-compliant safety concerns.
National Board of Boiler and Pressure Vessels Inspectors

The most recent annual report of the National Board’s Canadian and American violations relating to only Boiler and Pressure Vessels, includes the following examples:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>NUMBER</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Total Inspections</td>
<td>544,827</td>
<td></td>
</tr>
<tr>
<td>Total Violations</td>
<td>41,323</td>
<td>8</td>
</tr>
<tr>
<td>Control Violations</td>
<td>12,423</td>
<td>30</td>
</tr>
<tr>
<td>Boiler Piping and System Violations</td>
<td>8,042</td>
<td>19</td>
</tr>
<tr>
<td>Pressure Relieving Device Violations</td>
<td>8,205</td>
<td>20</td>
</tr>
<tr>
<td>Other Violations (four areas)</td>
<td>12,653</td>
<td>23</td>
</tr>
</tbody>
</table>

The greatest concern is that the two most serious violations, control and pressure relieving devices, relate to items required to ensure safety. Plant Control Systems and Pressure Relieving Devices represent 50 per cent of the total safety concerns.

Technical Standards and Safety Authority Periodic Inspections

During 2004, TSSA issued 6,796 directives resulting from 1,926 plant inspections relating to Boilers, Steam Prime Mover, Compression and Refrigeration Plants.

Of those directives, 482 (7.1%) were directed at safety relief valves and 1,190 (17.5%) involved concerns with control devices. This represents 25 per cent of the safety directives being aimed at deficiencies in two of the most important items of safety protection in Ontario plants.

These two independent findings clearly present a serious lack of appreciation, understanding and maintenance of these essential safety components and strongly supports the value and need for plant inspections that identify concerns before they become an incident.

What You Can Do To Reduce Risk

The actions you take or do not take can either protect or endanger the public, employees and your company’s investment in the facility. Reducing risk requires knowledge, responsibility, discipline and teamwork.

1. **Know the Regulation.** Make sure you and other responsible persons are completely familiar with the Operating Engineers Regulation and Directors Orders. It is readily available at www.tssa.org and a copy should be in every plant. Remember that in the event of an incident, you are expected to answer questions and demonstrate proper knowledge, actions and procedures. If you are a Chief Engineer/Operator, you must ask yourself the question: Do I conform to the requirements of Section 15 of the Regulation?

2. **Be Diligent.** If you have never experienced an incident or serious plant failure, it is all too easy to assume that modern equipment is fail proof. We all know it is not. Make sure everyone on your team is trained and committed to following the prescribed procedures. Appropriate testing and maintenance procedures are essential to ensure the effective operation of safety devices and control systems, as well as the plants equipment and systems.
3. **Work in Partnership with the TSSA.** The TSSA is a valuable safety partner and resource. We can help you understand your responsibility for compliance, provide on-site consultations and share our wealth of knowledge and experience in the goal of safe and effective plant operation.

4. **Report Accidents and Near Miss Incidents.** Ensure all accidents and near miss incidents involving injury to people or damage to equipment are reported to the Chief Officer as required by the Regulation. Your regional Power Plant Inspector will be pleased to assist you with this.

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**An Accident Waiting to Happen? Be Proactive.**

Why wait for a mandatory inspection to identify a hazard at your plant? Call the TSSA for an on-site consultation. We can work with you and your safety team to help identify and correct potential safety issues and risks before they become a problem.

For further information or assistance, please contact your Regional Power Plant Inspector, Allan Labombard at (905) 478-8291.

Sincerely,

John W.B. Coulter, C.E.T. TECH C.E.I
Manager and Chief Officer
Operating Engineers