



Department Correspondence Environment, Health & Safety

Date: September 24, 2009

**Subject: Canton Plant
Radiation Management Program**

**To: Memo to EHSMS File
Record of Decision**

Republic receives numerous “inquiries” and “specification requests” concerning the chemical and metallurgical makeup of our various grades of steel from our customers and potential customers. These requests look for not only what is in our products (e.g., AISI specifications), but also what is not in them (free from mercury, cadmium, hexavalent chromium, radiation, etc.).

Environmental regulations in the United States require that steels made in this country conform to strict regulations, requirements and directives which minimize/eliminate any adverse effect for steel products made in the US. Further, health and safety regulations are such that Republic has a licensed Radiation Safety Officer at our plant whose responsibilities include the proper management, including disposal (see below) of our nuclear materials as licensed from the Ohio Department of Health.

This document addresses two radiation contamination risks within our Canton Plant. First, there is a potential risk that contaminated scrap or other steelmaking consumables could be received from our suppliers. In that event, our goal is assuring that our shipped product is “free from radioactive contamination” using commercially available controls by preventing entry of radioactive scrap into the production process and by further testing to verify the absence of radioactivity in our steels. Second, there is a potential risk that steels could be inadvertently contaminated from the mold level control systems (radiological sources) at our casters. Any failure of this equipment would result in stoppage of the casting process on the affected strand. A number of practices and procedures then would be initiated to verify and identify the extent of radiological contamination, to isolate the material and importantly, to decontaminate the process before returning to normal operation. Additionally, contractual arrangements have been made with the provider of our Cobalt 60 sources at our casters. Upon source depletion, rather than disposing them, they are returned to the provider for their recycle/reuse of the spent radioactive materials.

We provide this document as only a summary of the overall program in place at our Canton Plant. For commercially competitive reasons, specific procedures/practices are excluded and this will be the extent of the detail provided in response to customer inquiries.

The Canton Plant combines two Environment, Health & Safety Management System (EHSMS) Plans and a number of quality system procedures into what it considers the Canton Plant Radiation Management Program. The core documents include those listed in the following table:

Document Number	Document Name	Document Purpose and Scope
CAPCM1099	Purchased Scrap Management Plan – Melt Shop Consumables	<p>This procedure outlines our purchasing policies for melt shop consumables, including scrap and includes a statement that:</p> <p>“All grades of purchased scrap shall be free of radioactive contamination or radiation sources. Any inbound railcar or truck that sets off a radiation detection alarm must be processed following stringent procedures. If it is found that radioactive materials or contamination is present, the car will be rejected for return to the supplier. The rejected railcar or truck will be handled in accordance with applicable laws or rules of the Ohio Department of Health, Bureau of Radiation Protection.”</p>
SMS0503	Plant Procedure Canton Radiation Plan	<p>The plan provides for:</p> <ol style="list-style-type: none"> 1. Use by employees in the event of observed damage to any of the plant’s radioactive gauge housings, 2. The detection of radiological contamination of incoming scrap, and 3. The detection of radiological contamination of product resulting from accidental introduction of radioactive materials in the steel making process.
SMS.Canton.5.04	Weekly Radiation Detector Test Log	<p>This document captures the weekly “verifications” that the detectors at the gates are functioning.</p>
EHSMS.7.01.05	Canton Plant Scrap Management Program (SMP)	<p>This plan outlines procedures and practices for:</p> <ol style="list-style-type: none"> 1. Minimizing the use of scrap that contains contaminants, 2. Establishing purchasing specifications for scrap, 3. Providing a mechanism to return nonconformant materials (including radiation contamination) to the original supplier without ever taking receipt of such materials.

Primarily, as detailed in SMS0503, the Canton Plant currently has Exploranium Radiation Detectors at our inbound rail and truck gates to survey not only scrap shipments, but also other steel making consumables, for detectable levels of radioactive sources and/or contamination upon arrival and prior to delivery acceptance. The current detection system provides repetitive looks at the inbound scrap. In addition to the gate monitors, another Exploranium detection unit is staged at the inbound track to our melt shop. In this way, scrap is surveyed twice; once at the gates and again prior to being melted. If the detectors alarm, numerous procedures are followed to verify the contaminated materials and isolate them for return to the original supplier.

As another level of protection against radioactive contamination of our products, in the unlikely event that a source of radiation would not be detected at either the gates or prior to entry to our melt shop, there is another radiation detector located in our Canton Plant. Steel heat samples are tested at this detector and if radiation is detected, a number of practices and procedures would be initiated to verify and identify the extent of radiological contamination, to isolate the material and importantly, to again decontaminate the process before returning to normal operation.

Based on the above, one can see that Republic has an extensive program in place with the goal of ensuring that our steel products are “free from radioactive contamination” using commercially available controls. While we cannot directly control shippers of steelmaking consumables, every practical step is taken to reject radioactive scrap at the gate and to then follow additional monitoring/detection practices within the plant to assure radioactive-free steel products.

This document serves as our record of decision for this topic.



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