

# **Durham York Energy Centre Construction Phase Audit Plan**

## **Introduction**

The *Durham York Energy Centre Construction Phase Audit Plan* has been prepared to satisfy Condition 16.3 of the Notice of Approval to Proceed with the Undertaking for the Durham and York Residual Waste Study (Ministry of the Environment EAAB File Number EA-08-02). The Construction Phase Audit Plan describes the requirements for audits to be performed by a qualified, independent, professional engineer during the construction phase of the undertaking.

The Durham York Energy Centre is an energy-from-waste (EFW) facility to be constructed in the Municipality of Clarington, Ontario. Owned by The Regional Municipality of Durham and The Regional Municipality of York (Regions), the facility will process up to 140,000 tonnes of non-hazardous, municipal solid waste per year. Heat generated during the combustion of waste will be used to generate steam and electricity. Recyclable metals will also be recovered from the ash. The facility will be designed, built, and operated by Covanta Durham York Renewable Energy Limited Partnership (Contractor) in accordance with all applicable regulations using state-of-the-art air pollution control technology. The undertaking was approved under the *Environmental Assessment Act* by the Minister of the Environment and the Lieutenant Governor in Council on November 3, 2010. A Certificate of Approval for waste, air and noise, and storm water was approved June 28, 2011. It is anticipated that construction will commence in January 2012.

## **Role of the Independent Auditor**

The role of the Independent Auditor is to provide a snap-shot evaluation of the undertaking to confirm that activities are conforming to legislative requirements, requirements of approvals and permits, commitments made in the Environmental Assessment (EA) report for the undertaking are being implemented and that the applicable records required to be kept are on site. The Owner's Representative, separate from the Independent Auditor, will be responsible for the comprehensive surveillance of the undertaking.

The Owner's Representative (HDR Corporation) will inspect all work completed by the Contractor, review construction drawings and specifications, change orders, applications for payment, and maintain a continuous on-site presence during all construction activities. The Owner's Representative assists the Regions in confirming that the contractor designs, builds, and operates the facility in accordance with legislative requirements, permit obligations, contractual requirements, sound engineering and construction practices.

The Independent Auditor will be selected in accordance with the definition provided in the Notice of Approval of the EA.

“Qualified, Independent, Professional Engineer” means a person who holds a license, limited license or temporary license under the *Professional Engineers Act* who is not an employee of the Regional Municipality of Durham, the Regional Municipality of York, the operator of the undertaking, or the ministry, who has not been involved in the design of the undertaking but who is knowledgeable about the *Environmental Protection Act*, Regulation 347 and Ontario Regulation 149/05, ministry guidelines affecting thermal treatment facilities, any other ministry approval issued for the undertaking as well as being experienced at assessing compliance with environmental legislation and requirements of certificates of approval issued under the *Environmental Protection Act*.

Once selected, the Independent Auditor will schedule a pre-audit consultation to verify the timing, scope and report submission. On an annual basis, the Independent Auditor will be required to conduct a detailed walkthrough of the entire site, a review of all operations used in connection with the undertaking, and a detailed review of all records required to be kept by the Notice of Approval of the EA or under any other ministry approval. The audit scope will confirm:

- 1) Compliance with applicable legislation;
- 2) Compliance with applicable approvals and permits such as the Certificate of Approval and site plan permit;
- 3) Conformance with EA commitments;
  - Employment of controlled entrances and exits at the construction site to minimize the offsite tracking of mud.
  - Temporary and permanent grassing in disturbed areas.
  - Dust control during dry periods.
  - Possible implementation of an idling protocol as required.
  - Adherence to an equipment maintenance program.
  - Ambient air quality monitoring for particulate matter may be undertaken to monitor the effectiveness of the mitigation measures.
- 4) Records verifying visual sweep for species of concern; and
- 5) Records demonstrating adherence to protocols for archaeological aspects.

## Timing and Frequency of Audits

In keeping with the role of the Independent Auditor construction phase audit reports will be submitted based on specific milestones. The proposed milestones and report submission dates are as follows:

- a. Site preparation and installation of services: June 15, 2012
- b. Completion of Foundations: April 15, 2013
- c. Erection of Building: October 15, 2013
- d. Completion of Equipment Installation: March 15, 2014
- e. Completion of Acceptance Testing. June 15, 2014

Audit reports will be submitted to the Ministry within 10 business days of the date that the audit is completed as listed above. The audit dates may be subject to change to accommodate the construction schedule. Audit date changes will be subject to the agreement of the Regional Director.

The proponents will submit a separate audit plan for the acceptance phase to the satisfaction of the Regional Director by February 15, 2014. In addition, the proponents will submit the audit plan for the operation phase to the satisfaction of the Regional Director by October 15, 2014.

## Audit Methodology

Each audit will include a detailed walkthrough of the entire site by the Independent Auditor to view the construction operations and the environmental controls and mitigation measures in place. The Independent Auditor will compare the site activities with the appropriate ministry approvals contained in the Environmental Assessment and Certificate of Approval. The Independent Auditor will identify any discrepancies or deviations from what has been approved by the Ministry. The audits will also include a comprehensive review of project records required on site.

## Audit Reports

The Independent Auditor will submit to the Ministry a signed, written report summarizing the results of the audit. The audit report will be submitted within 10 business days following completion of the Audit. The audit reports shall include the following.

- A summary of the site visit, the records reviewed, and any interviews with staff from the Regions, the Owner's Representative, or the Contractor.
- A review of the recommendations of the previous audit report, if applicable, and any actions taken by the Regions to address those recommendations.
- An assessment of compliance with all applicable approvals, permits, and regulations

- A review of the data from the monitoring and testing plans during the audit period
- A review of the complaints received during the audit period
- A review of recommendations for improving the construction phase as received from the EFWAC
- Conclusions
- Recommendations of any improvements that could be made to ensure that the construction site remains protective of the health and safety of people and the environment.

Note: the audit plan should also include time-dated photographs of the construction progress.

## **Acceptance Testing Phase Audit Plan**

The Regions will submit a separate Acceptance Testing Audit Plan to the Director and Regional Director at least six months prior to initiation of the Acceptance Testing. The Regions will provide the name and employer of the acceptance phase auditor at least two months prior to acceptance testing. The Acceptance Phase Audit Plan will cover the period as detailed in the attached table.

The Regions will submit the Acceptance Testing Phase Audit Plan for review and acceptance to the Director and Regional Director by June 15, 2014.

## **Operations Phase Audit Plan**

The Regions will submit a separate Operations Phase Audit Plan to the Director and Regional Director at least six months prior to initial receipt of municipal waste at the facility. The Regions will provide the name and employer of the operations phase auditor at least two months prior to receipt of municipal waste at the facility. The Operations Phase Audit Plan will cover the period after the Acceptance Certificate is issued. The plan will address the frequency and timing of operations phase audits and audit methodology and reporting requirements.

## Required Acceptance Tests

<b>Test</b>	<b>Acceptance Test Requirements and Description:</b>	<b>FREQUENCY/ DURATION</b>
30-Day Reliability Test	Facility-wide operation at a minimum of 95% of the Demonstrated Design Steam Flow. During the 30-Day Reliability Test, the 4-hour block average steam flow will not exceed 110% of the highest 4-hour block average steam flow measured during any of the three 8 hour Energy Recovery Tests.	One 30 day duration test
Throughput Capacity Test	Operation of the Facility at full load for five (5) consecutive days to demonstrate compliance with the Throughput Guarantees in Exhibit 2 to Appendix 19	One 5-day duration test
Energy Recovery Test	Demonstrate compliance with the Electricity Production Guarantees in Exhibit 2 to Appendix 19.	Minimum of –Three (3)-tests. Each test shall be a minimum of 8-hour duration tests (performed during the Throughput Capacity Test)
Residue Quality Test	Residue Quality (bottom ash only) meeting Performance Guarantees for moisture content of less than or equal to 25%, unburned carbon of less than or equal to 3% during the Energy Recovery Tests and Throughput Capacity Tests.	Simultaneous with 5 day Throughput Capacity Test
Residue Quantity Test	Residue Quantity meeting Performance Guarantee for the total Residue (including bottom ash and fly ash) weighing not more than 30% of the Tonnage combusted to produce such Residue during the 30-day Reliability Test, adjusted for the waste HHV in accordance with Table A10-2.	Measured during the 30-Day Reliability Test and the 5-Day Throughput Capacity Test.
Metals Recovery Test	The ferrous and non-ferrous recovery systems to be tested to demonstrate the Metals and Other Metals Recovery Guarantees specified in Exhibit 2 to Appendix 19.	Minimum of Three (3) 8-hour tests on each system
Environmental	The testing of all emission and operating	

Compliance Test	<p>parameters in accordance with requirements established by the CofA and the MOE anytime during the 30-day Reliability Test.</p> <p>The CEMS shall be certified and used to demonstrate continuous compliance during the Test Period with all CEMS emission parameters.</p>	
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