Notice of Alteration Form

Manitoba
Sustainable Development

Client File No. : 4970.00	Environment Act Licence No. : 2616 RR

Legal name of the Licencee: Standard Aero Limited

Name of the development: StandardAero Plant 3

Category and Type of development per Classes of Development Regulation:

Manufacturing <SELECT>

Licencee Contact Person: Taylor Kirouac
Mailing address of the Licencee: 33 Allen Dyne Road
City: Winnipeg Province: MB Postal Code: R3H1A1
Phone Number:(204) 318-7746 Fax: Email: taylor.kirouac@standardaero.com

Name of proponent contact person for purposes of the environmental assessment (e.g. consultant):
Taylor Kirouac

Phone: (204) 318-7746 Fax:	Mailing address: 33 Allen Dyne Road

Email address: taylor.kirouac@standardaero.com

Short Description of Alteration *(max 90 characters)*:
Additional robot plasma spray booth & replacement of small booth with larger booth

Alteration fee attached: Yes: ☑ No: ☐

If No, please explain:

Date: 2020-02-10	Signature: TKirouac Printed name: Taylor Kirouac

A complete Notice of Alteration **(NoA)** consists of the following components:

- ☑ **Cover letter**
- ☑ **Notice of Alteration Form**
- ☑ **2 hard copies and 1 electronic copy of the NoA detailed report** (see "Information Bulletin - Alteration to Developments with Environment Act Licences")
- ☑ **$500 Application fee, if applicable** (Cheque, payable to the Minister of Finance)

Submit the complete NoA to:

Director
Environmental Approvals Branch
Manitoba Sustainable Development
1007 Century Street
Winnipeg, Manitoba R3H 0W4

For more information:

Phone: (204) 945-8321
Fax: (204) 945-5229
http://www.gov.mb.ca/sd/eal

Note: Per Section 14(3) of the Environment Act, Major Notices of Alteration must be filed through submission of an Environment Act Proposal Form (see "Information Bulletin – Environment Act Proposal Report Guidelines")

Notice of Alteration Report

1844 Sargent Avenue
Environmental Act Licence No. 2616 RR
Client File No. 4970.00

February 10, 2020

Prepared by:
Taylor Kirouac, EIT
Environmental Affairs Coordinator
StandardAero

StandardAero

The Licencee, Standard Aero Limited, owns and operates the facility at 1844 Sargent Avenue known as Plant 3. The building is registered under client file No. 4970.00 and Environment Act Licence No. 2616 RR.

Background

Thermal spray, also known as metalizing, is a coating process in which melted material is sprayed onto a surface. StandardAero Plant 3 has six booths that are used for various thermal spray processes including plasma spray, High Velocity Oxygen Fuel (HVOF), electric wire arc, combustion flame powder and combustion flame wire. These booths have associated dust collectors to control air emissions and collect the metalizing waste into 205 liter drums.

Electric wire arc spray uses two metallic wires as the coating feedstock. The two wires are electrically charged and fed into the arc gun. When the wires are brought together, the opposing charges create enough heat to continuously melt the tips of the wires. Compressed air is used to move the melted material onto the part surface to form the coating.

The combustion flame processes can be classified as either combustion flame wire or combustion flame powder. As indicated by the names, the flame wire process uses a wire as the source of material and the flame powder uses powdered material. A fuel, either acetylene or hydrogen, and oxygen are used to melt and transport the material to the surface of the part.

The plasma gun incorporates an electrode (cathode) and a nozzle (anode) separated by a small gap forming a chamber between the two. An arc is produced by applying power. The arc strips the gases of their electrons forming plasma. When the coating material is injected into the gas, it is melted and accelerated towards the part to form the coating. Typical plasma gases are hydrogen, nitrogen, argon and helium. Various mixtures of these gases (usually 2 of the 4) are used depending on the desired coating characteristics.

Process Changes

A smaller manual electric wire arc booth is being replaced by a larger booth that will be used for robotic electric wire arc, combustion flame wire and combustion flame powder. The larger booth will use the existing dust collector but also requires the installation of an additional dust collector to maintain the high capture velocity in the booth. The manual electric wire arc process, that was previously performed in the smaller booth, will now be completed in another thermal spray booth located in the same building. The new booth will use the following equipment:

Metco 6CE Control Unit
Fanuc r-30iA Robot System
5MPE Powder Feeder
Praxair CoArc 9910 Electric Wire Arc
Donaldson Torit Downflo® 2DF16 Dust Collector (in addition to the pre-existing AAF 3RC12 dust collector)

An additional thermal spray booth has been installed and will be used for robotic plasma spray. The new plasma spray booth will utilize the following equipment:

Fanuc R-30iA Robot System
9MP Powder Feeder
Climet Heat Exchanger
Multi-Coat Process Control Centre
Multi-Coat Operators Desk
Power Supply PT-1120
GMC-A20 Plasma Gas Management Center
Donaldson Torit Downflo® II DFT 4-48 Dust Collector

Control of Air Emissions

Robot Electric Wire Arc

The electric wire arc emissions are controlled by a Donaldson Torit Downflo® 2DF16 dust collector and, the pre-existing, AAF 3RC12 dust collector. The 2DF16 dust collector contains 16 Ultra-Web FR filters and the 3RC12 contains 12 Ultra-Web FR filters. The Ultra-Web FR filters have an efficiency of 99.999% for 0.3 micron to 0.5 micron particulate.

Robot Plasma Spray

The Donaldson Torit Downflo® II DFT 4-48 dust collector contains 48 Ultra-Web FR filter cartridges. The cartridges filter 0.3 to 0.5 micron particulate with an efficiency of 99.999%.

Noise Control

The City of Winnipeg Zoning By-Law 200/2006 classifies the area as a general manufacturing zone (M2). The two dust collectors have been installed between StandardAero Plants 1 (33 Allen Dyne Road) and 3 (1844 Sargent Avenue) in a location that already contained 5 dust collectors. The closest noise-sensitive receptor is the Hampton Inn by Hilton Winnipeg Airport/Polo Park at a distance of approximately 330 meters from the dust collectors. We have not had any complaints related to noise generated by our dust collectors.

Waste Management

The dust collectors accumulate the waste in 205 liter drums. Any hazardous waste that is generated will be disposed of through a licensed hazardous waste carrier and receiver.

Conclusion

The environmental impacts from the alteration of StandardAero Plant 3 are considered insignificant due to the use of the air pollution control systems, location in a general manufacturing zone and the use of appropriate waste management practices.

Beshada, Eshetu (CC)

From: Kirouac, Taylor <Taylor.Kirouac@StandardAero.com>
Sent: March 26, 2020 3:32 PM
To: Beshada, Eshetu (CC) <Eshetu.Beshada@gov.mb.ca>
Cc: Teixeira, Annelie <Annelie.Teixeira@StandardAero.com>; Gala, Eugene <Eugene.Gala@StandardAero.com>; Burland Ross, Siobhan (CC) <Siobhan.BurlandRoss@gov.mb.ca>
Subject: RE: File 4970.00 - Standard Aero Plant 3 - NoA - Additional Info Request

Good Afternoon Dr. Beshada,

Your summary of the alteration is correct.

Answers to your questions can be found in the red text below.

If you have any additional questions, it may be beneficial for us to have a conference call with Annelie Teixeira, our Thermal Spray Process Engineer, and Eugene Gala, one of our Facilities Engineers – please let me know if this is something you would like me to arrange.

Regards,
Taylor

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StandardAero

"The trusted service partner"

From: Beshada, Eshetu (CC) [mailto:Eshetu.Beshada@gov.mb.ca]
Sent: Friday, March 20, 2020 12:15 PM
To: Kirouac, Taylor <Taylor.Kirouac@StandardAero.com>
Cc: Burland Ross, Siobhan (CC) <Siobhan.BurlandRoss@gov.mb.ca>
Subject: [EXT] File 4970.00 - Standard Aero Plant 3 - NoA - Additional Info Request

Dear Taylor,

I have reviewed the Notice of Alteration submitted for Standard Aero Plant 3. I summarize the alteration at the facility as follows.

1. Replacing a smaller booth currently used for small manual electric wire arc with a larger booth with additional dust collector to accommodate the following thermal spray coating process
    a. A robotic electric wire arc spray process
    b. Combustion flame process such as
        i. Combustion flame wire, and
        ii. Combustion flame powder
2. Installation of a new thermal spray booths a dust collector for a robotic plasma spray process

The following information should be provided to proceed with the review process.

1. It is not mentioned that the three thermal spray coating processes indicated above area new addition or exiting processes that will be relocated to the new proposed booths? Two new booths (Plasma using multi-coat in one booth, Combustion flame powder, flame wire, and EWA in the second booth). One relocated process (Electric Wire Arc (EWA) – combined now with a previously established manual plasma booth).
    a. what are the rational for the additional metal coating operation and/ or the proposed additional booths? The booths are required in order to accomplish work in Plant 3 for Safran, an OEM that we only recently started doing work for at our Winnipeg site. Safran requires robotic application of thermal spray. In Plant 3 we did not have robotic flame powder, flame wire, or EWA. The plasma booth will give us additional plasma capabilities in Plant 3. We recently closed down one of our facilities in BC – the work and equipment have been transferred to Winnipeg from that site.
    b. Will the additional coating operation increase the plant capacity?, if so by what percent? We estimate that we have approximately 20% more thermal spray capacity in Plant 3.
    c. Are the metal element used for the exiting coating operation similar for the proposed process? Yes, they are similar to what we already spray in Plant 3.
    d. If different metals are used for coating provide the proposed type of metals. The only material that is new to Plant 3 at this time is Metco SF Aluminum wire which is 94% aluminum and 6% silicon.
    e. If existing metal type is used for the coating, what is the potential emission increase from the facility? The emission increase is insignificant due to the use of dust collectors with filters that have an efficiency of 99.999% for 0.3 to 0.5 micron particles.
2. Provide the number of each thermal spray coating currently used in the facility. We use many different coating materials and are always looking to add new repairs to our capabilities. The current number of thermal spray booths/processes in Plant 3 are as follows:
   Robot plasma: 3 (will be 4 with the new one)
   Manual plasma: 1
   Robot Flame powder/wire: 0 (will be 1 with new booth)
   Manual Flame powder/wire: 2
   Robot EWA: 0 (will be 1 but combined with above robot flame powder/wire, so new capability but not a separate booth)
   Manual EWA: 1 (combined with manual plasma)
   Please note:
   Manual plasma and manual EWA share one booth, manual EWA was a separate booth but is now performed in the manual plasma booth (nothing new built or installed to accommodate this)
   Robot Flame powder/wire and robot EWA share one booth, as mentioned above

3. Provide an updated floor plan indicating the existing and proposed thermal spray booth locations. See attached

Regards

Eshetu Beshada, PhD, P. Eng.
Environmental Engineer
Municipal and Industrial Section
Environmental Approvals Branch
Manitoba Conservation and Climate
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Winnipeg, MB R3H 0W4

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