

## **Statement of Basis**

**Permit to Construct P-2008.0097  
Project No. 60887**

**NxEdge, Inc.  
Boise, Idaho**

**Facility ID No. 001-00202**

**Final**

**September 9, 2011,  
Kelli Wetzel *KW*  
Permit Writer**

**The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.**

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## ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS No.	Chemical Abstracts Service registry number
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
gpm	gallons per minute
gph	gallons per hour
gr	grain (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per year
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
lb/hr	pounds per hour
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
NAAQS	National Ambient Air Quality Standard
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
PAH	polyaromatic hydrocarbons
PC	permit condition
PCB	polychlorinated biphenyl
PERF	Portable Equipment Relocation Form
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct

PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SCL	significant contribution limits
SIC	Standard Industrial Classification
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
T/yr	tons per consecutive 12-calendar month period
TAP	toxic air pollutants
U.S.C.	United States Code
UTM	Universal Transverse Mercator
VOC	volatile organic compounds
yd <sup>3</sup>	cubic yards
µg/m <sup>3</sup>	micrograms per cubic meter

## FACILITY INFORMATION

### *Description*

NxEdge, Inc. (NxEdge) fabricates, refurbishes, and provides coatings for metal products used in the glass, semiconductor business, and other related industries. The four major process areas within the NxEdge facility that are sources of air pollution are the following: fluoropolymer (FP) coating application via wet and powdered coating, sputtered targets and services (STS) application via plasma spray and wire arc spray, advanced engineered coating (AEC) application via plasma spray, and cleaning and refurbishing (C&R). All four of these process areas are sources of emissions. In addition, two make-up air units are used to provide fresh air to the FP area spray booths and the northwest manufacturing area. Both of these units are sources of emissions.

The FP process consists of the WETPOWC spray application booths (four total), each equipped with overspray arrestors and exhaust fans, the ECOVEN1 0.6 MMBtu/hr natural gas-fired curing oven, and the ECOVEN1 electrically-fired curing ovens (two total). Typically, one of the spray booths is used to apply wet coatings. The three remaining spray booths are used to apply dry powder coatings. The ovens are used to cure powder coated products. The FP process includes the following emissions units:

- Four coating spray application booths (emissions unit ID WETPOWC, controlled by integral filter units, with emissions point EP-3)
- One natural gas-fired curing oven and two electric curing ovens (emissions unit ID ECOVEN1, with no controls, with emissions point EP-9)

The STS arc spray process coats small parts and preps, coats, and finishes stainless steel tubes in a series of steps. The steps are performed in the following process areas: the GEN3 plasma spray applicator, the GEN4 plasma spray applicator, the GEN5 plasma spray applicator, the RD1 research and development spray room, the BB1 bonder blaster operation, and the FS1 finishing stand operation. The STS process includes the following emissions units:

- The GEN3 plasma spray applicator (emissions unit ID GEN3, controlled by a cyclone and the baghouse designated MAC1, with emissions point EP-1)
- The GEN4 plasma spray applicator (emissions unit ID GEN4, controlled by a cyclone and the baghouse designated MAC2, with emissions point EP-1)
- The GEN5 plasma spray applicator (emissions unit ID GEN5, controlled by a cyclone and the baghouse designated FARR2, with emissions point EP-13)
- The Research & Development (R&D) spray room (emissions unit ID RD1, controlled by the baghouse designated FARR1, with emissions point EP-2)
- The Bonder/Blaster wire bonder and abrasive blasting cabinet (emissions unit ID BB1, controlled by the baghouse designated MAC3 shared with the finishing stand, with emissions point EP-14)
- The Finishing Stand manual sanding operation (emissions unit ID FS1, controlled by the baghouse designated MAC3 shared with the bonder blaster, with emissions point EP-14)

The AEC process coats metal parts using a robotic spray process. This process uses compressed air to transfer powder coating material from automated hoppers to a hot gas stream that then deposits it onto parts. The process consists of the SBU1, SBU2, and SBU3 automated powder coating rooms, each equipped with the SBUHTR1, SBUHTR2, and SBUHTR3 heated air supply systems, the SBUFARR1, SBUFARR2, and SBUFARR3 filter units, a robotic plasma spray arm for powder coating parts, the AECPP1 (two cabinets total) and AECPP2 (three cabinets total) media blasting operations, and air pollution control equipment associated with this process. The AEC process includes the following emissions units:

- Three automated coating application spray booths (emissions unit IDs SBU1, SBU2, SBU3, controlled by baghouses designated SBUFARR1, SBUFARR2, SBUFARR3, with emissions points EP-6, EP-7, and EP-8)

- Three spray booth air supply heaters (emissions unit IDs SBUHTR1, SBUHTR2, SBUHTR3, with no controls, with emissions points EP-10, EP-11, and EP-12)
- Two media blasting cabinet operations located in the AEC area (emissions unit ID AECPP1, controlled by a filter unit, with emissions point EP-16)
- Three media blasting cabinet operations located in the FP area (emissions unit ID AECPP2, controlled by a filter unit, with emissions point EP-15)

The cleaning and refurbishing (C&R) process includes the CAMBC suction/pressure media blasting cabinets (two total) and the APBR parts buffing room. The media blasters are used to prepare aluminum and stainless steel parts for coating. The two media blasters are equipped with reclaim cyclones and filter units and vent into a common 6" exhaust duct that emits outside above the building roof vent to the atmosphere. The aluminum parts buffing room is used to hand-buff finished aluminum parts. Air from the room is drawn through a fan and exhausted through a roof vent. The C&R process includes the following emissions units:

- Two media blasting cabinets (emissions unit ID CAMBC, controlled by an integral filter unit, with emissions point EP-4) and
- Buffing room air (emissions unit ID APBR, uncontrolled, with emissions point EP-5).

Fresh air is supplied to the FP area spray booths and the building's northwest manufacturing area. The combustion gases from the make-up air units are emitted through the FP spray booth exhaust and the northwest area exhaust. This process includes the following emissions units:

- FP spray booth make-up air unit (emissions unit ID NMAU1, uncontrolled, with emissions point EP-3) and
- Northwest manufacturing area make-up air unit (emissions unit ID WMAU1, uncontrolled, with emissions point EP-17).

### ***Permitting History***

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

September 18, 2008	P-2008.0097, modification was issued that renamed a few processes and added an additional process activity to the facility. Permit status (A, but will become S upon issuance of this permit)
May 5, 2006	P-050038, modification was issued that changed the facility name and responsible official and two permit conditions. Permit status (S)
July 22, 2005	P-040007, initial PTC. Permit status (S)

### ***Application Scope***

This PTC is for a minor modification at an existing minor facility.

The applicant has proposed to:

- Increase the aluminum oxide media usage for AEC parts preparation room one and two and install an additional filter unit in each room
- Increase the annual powder coating usage in the fluoropolymer (FP) area curing ovens
- Increase the powder coating usage in the spray paint booths
- Add two existing unpermitted make-up air units

## Application Chronology

June 23, 2011	DEQ received an application and an application fee.
July 7 – July 22, 2011	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
July 6, 2011	DEQ determined that the application was complete.
July 18, 2011	DEQ made available the draft permit and statement of basis for peer and regional office review.
July 25, 2011	DEQ made available the draft permit and statement of basis for applicant review.
September 1, 2011	DEQ received the permit processing fee.
September 9, 2011	DEQ issued the final permit and statement of basis.

## TECHNICAL ANALYSIS

### Emissions Units and Control Devices

Table 1 EMISSIONS UNIT AND CONTROL DEVICE INFORMATION

ID No.	Source Description	Control Equipment Description	Emissions Point ID No. and Description
HVLP wet coating application spray booth (part of the FP process)/WETPOWC	Supply Air Flow: 16,000 cfm (split among all four booths) Exhaust fan: Twin Cities model TB-30E4 Exhaust Air Flow: 10,000 cfm Exhaust fan rating: 2 hp	HVLP spray gun Paint booth integral filters Manufacturer: Paint Pockets Control Efficiency: 97%	EP-3
Halar™ powder coating application booth (part of the FP process)/WETPOWC	Supply Air Flow: 16,000 cfm (split among all four booths) Exhaust fan: Greenheck model TCB-2-22 Exhaust Air Flow: 4,000 cfm Exhaust fan rating: 4 hp	Electrostatic powder application gun Paint booth integral filters Manufacturer: Paint Pockets Control Efficiency: 99%	EP-3
Teflon™ powder coating application booth (part of the FP process)/WETPOWC	Supply Air Flow: 16,000 cfm (split among all four booths) Exhaust fan: Greenheck model TCB-2-18 Exhaust Air Flow: 3,500 cfm Exhaust fan rating: 4 hp	Electrostatic powder application gun Paint booth integral filters s Manufacturer: Paint Pockets Control Efficiency: 99%	EP-3

Table 2 EMISSIONS UNIT AND CONTROL DEVICE INFORMATION (continued)

ID No.	Source Description	Control Equipment Description	Emissions Point ID No. and Description
Natural gas-fired curing oven (part of the FP process)/ECOVEN1	Manufacturer: Wisconsin Oven Corp. Model: EWN-612-8 Rated Heat input: 0.6 MMBtu/hr	None	EP-9
Electric curing oven (part of the FP process)/ECOVEN1	N/A	None	EP-9
Electric curing oven (part of the FP process)/ECOVEN1	N/A	None	EP-9
Plasma spray applicator (part of the STS process)/GEN3	Manufacturer: Brigs Model: BPC-180 Max. Capacity: 30.4 lbs-powder/hr	Donaldson Torit model 20 cyclone and a MAC model 4M2F16 filter unit (MAC1) Control Efficiency: 0.002 gr/scf	EP-1
Plasma spray applicator (part of the STS process)/GEN4	Manufacturer: Praxair Model: SG-100 Max Capacity: 17.2 lbs-powder/hr	MAC Cyclone and a MAC model 2M2F8 filter unit (MAC2) Control Efficiency: 99.7%	EP-1
Plasma spray applicator (part of the STS process)/GEN5	Manufacturer: Brigs Model: BPC-180 Max. Capacity: 30.4 lbs-powder/hr	Camil-Farr cyclone and a Farr model GS24 filter unit (FARR2) Control Efficiency: 99.99%	EP-13
Research & Development spray room (part of the STS process)/RD1	Manufacturer: NxEdge Model: N/A Max. Capacity: 70 lbs-powder/hr	Camil-Farr cyclone and a Farr model GS20 filter unit (FARR1) Control Efficiency: 99.99%	EP-2
Bonder blaster (part of the STS process)/BB1	Manufacturer: NxEdge Model: N/A Max. Capacity: 200 lbs-media/hr	MAC Cyclone and a MAC filter unit w/ Farr model HMPTUF filters (MAC3) Control Efficiency: 99.99%	EP-14
Finishing stand (part of the STS process)/FS1	Manufacturer: NxEdge Model: N/A Max. Capacity: 2 tubes/hr	MAC Cyclone and a MAC filter unit w/ Farr model HMPTUF filters (MAC3) Control Efficiency: 99.99%	EP-14
Automated coating application spray booth (part of the AEC process)/SBU1	N/A	Farr model GS16 filter unit (SBUFARR1) Control Efficiency: 99.99%	EP-6
Automated coating application spray booth (part of the AEC process)/SBU2	N/A	Farr model GS16 filter unit (SBUFARR2) Control Efficiency: 99.99%	EP-7
Automated coating application spray booth (part of the AEC process)/SBU3	N/A	Farr model GS16 filter unit (SBUFARR3) Control Efficiency: 99.99%	EP-8
Spray booth air supply heater (part of the AEC process)/SBUHTR1	N/A	None	EP-10

**Table 3 EMISSIONS UNIT AND CONTROL DEVICE INFORMATION (continued)**

ID No.	Source Description	Control Equipment Description	Emissions Point ID No. and Description
Spray booth air supply heater (part of the AEC process)/SBUHTR3	N/A	None	EP-12
Two media blasting cabinets (part of the AEC process)/AECPP1	Manufacturer: Dayton (fan) and Titan Abrasive Systems (cabinets) Model: Dayton 5C532 fan and two Titan 4836 RPD Cabinets Rated Flow Rate: 2,790 cfm	Titan model 4836 RPD and Custom Unit with MERV-8 filter units (AECPP1) Control Efficiency: 99.9% and 99.9% respectively	EP-16
Three media blasting cabinets (part of the AEC process)/AECPP2	Manufacturer: Greenheck Fan Corp. (fan) and Titan Abrasive Systems (cabinet) Model: H-Cube-098 fan and three cabinets, two Titan 4848 RPD and an Empire PF-3648 Rated Flow Rate: 1,180 cfm	Titan model 4848 RPD, an Empire DCM-80A, and Custom Unit with MERV-8 filter units (AECPP2) Control Efficiency: 99.9%, 99.9%, and 99.9 % respectively	EP-15
Two Media blasting cabinets (part of the C&R process)/CAMBC	Manufacturer: Empire Abrasive Equipment Model: Empire PF-3648 Rated Flow Rate: 800 cfm	Empire DCM-80A (CAMBC) Control Efficiency: 95%	EP-4
Make-Up Air Unit/NMAU1	Manufacturer: Greenheck Model: DGX-125 Input Rate: 2.21 MMBtu/hr	None	EP-3
Make-Up Air Unit/WMAU1	Manufacturer: Greenheck Model: TSU-220 Input Rate: 1.42 MMBtu/hr	None	EP-17

### ***Emissions Inventories***

An emission inventory was developed for the sources of emissions at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant PTE were based on emission factors from AP-42, operation of 8,760 hours per year with the exception of NMAU1 and WMAU1, and process information specific to the facility for this proposed project. The emissions of NMAU1 and WMAU1 were based on operation of 8,234 hours per year. Summaries of the estimated controlled emissions of criteria pollutants, TAPs, and HAPs from the facility are provided in the following tables.

### **Pre-Project Potential to Emit**

The following table presents the pre-project potential to emit for all criteria pollutants from the units being modified as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 2 PRE-PROJECT POTENTIAL TO EMIT FOR CRITERIA POLLUTANTS**

Emissions Unit	PM <sub>10</sub>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC		Lead	
	lb/hr <sup>a</sup>	T/yr <sup>b</sup>	lb/hr	T/yr								
Point Sources												
AECPP1	0.0034	0.015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
AECPP2	0.0063	0.0038	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
ECOVEN1	0.0056	0.024	0.00	0.0019	0.074	0.322	0.066	0.288	0.84	0.118	3.7E-07	1.6E-06
NMAU1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
WMAU1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
WETPOWC	0.31	0.042	0.00	0.00	0.00	0.00	0.00	0.00	9.62	1.20	0	0
Pre-Project Totals	<b>0.33</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.07</b>	<b>0.32</b>	<b>0.07</b>	<b>0.29</b>	<b>10.46</b>	<b>1.32</b>	<b>0.00</b>	<b>0.00</b>

- a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.  
 b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

**Post Project Potential to Emit**

The following table presents the post project potential to emit for criteria pollutants from the units being modified as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 3 POST PROJECT POTENTIAL TO EMIT FOR CRITERIA POLLUTANTS**

Emissions Unit	PM <sub>10</sub>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC		Lead	
	lb/hr <sup>a</sup>	T/yr <sup>b</sup>	lb/hr	T/yr								
Point Sources												
AECPP1	0.0025	0.0045	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
AECPP2	0.0044	0.0038	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
ECOVEN1	0.0056	0.024	0.00	0.0019	0.074	0.322	0.066	0.288	0.84	0.318	3.7E-07	1.6E-06
NMAU1	0.017	0.068	0.0013	0.0054	0.22	0.89	0.18	0.75	0.012	0.068	1.1E-06	4.5E-06
WMAU1	0.010	0.043	0.0008	0.0034	0.14	0.57	0.12	0.48	0.008	0.043	7.0E-07	2.9E-06
WETPOWC	0.103	0.042	0.00	0.00	0.00	0.00	0.00	0.00	9.62	1.20	0	0
Post Project Totals	<b>0.14</b>	<b>0.19</b>	<b>0.00</b>	<b>0.01</b>	<b>0.43</b>	<b>1.78</b>	<b>0.37</b>	<b>1.52</b>	<b>10.48</b>	<b>1.63</b>	<b>0.00</b>	<b>0.00</b>

- a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.  
 b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

**Change in Potential to Emit**

The change in facility-wide potential to emit is used to determine if a public comment period may be required or if emissions modeling may be required, and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

**Table 4 CHANGES IN POTENTIAL TO EMIT FOR CRITERIA POLLUTANTS**

	PM <sub>10</sub>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC		Lead	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Sources												
Pre-Project Potential to Emit	0.33	0.09	0.00	0.00	0.07	0.32	0.07	0.29	10.46	1.32	0.00	0.00
Post Project Potential to Emit	0.14	0.19	0.00	0.01	0.43	1.78	0.37	1.52	10.48	1.63	0.00	0.00
Changes in Potential to Emit	<b>-0.19</b>	<b>0.10</b>	<b>0.00</b>	<b>0.01</b>	<b>0.36</b>	<b>1.46</b>	<b>0.30</b>	<b>1.23</b>	<b>0.02</b>	<b>0.31</b>	<b>0.00</b>	<b>0.00</b>

**Non-Carcinogenic TAP Emissions**

A summary of the estimated uncontrolled and controlled non-carcinogenic emissions increase of toxic air pollutants (TAP) is provided in the following table. The estimated controlled emissions increases of TAPs were below applicable emissions screening levels (EL). Estimated controlled TAP emissions were below the annual major source threshold.

Pre- and post project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

**Table 5 PRE- AND POST PROJECT NON-CARCINOGENIC TAP EMISSIONS SUMMARY  
POTENTIAL TO EMIT**

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Acetone	1.4	1.4	0	119	No
Aluminum – Metal and Oxide	0.163	0.163	0	0.667	No
Barium	1.0E-05	2.6E-05	1.6E-05	0.033	No
Calcium Hydroxide	0.0013	0.0013	0	0.333	No
Carbon Black	2.2E-03	2.2E-03	0	0.23	No
Chromium	2.6E-03	2.6E-03	5.0E-06	0.033	No
Cobalt	3.0E-04	3.0E-04	3.0E-07	0.0033	No
Copper	3.0E-05	3.0E-05	3.0E-06	0.067	No
Diacetone Alcohol	1.10	1.10	0	16	No
Dichlorobenzene	7.1E-07	5.0E-06	4.3E-06	20	No
Fibrous Glass Dust	0.0018	0.0018	0	0.667	No
Flouride	0.103	0.103	0	0.167	No
Hafnium	4.8E-05	4.8E-05	0	0.033	No
Hydrogen Chloride	1.3E-02	1.3E-02	0	0.05	No
i-Butyl Alcohol	0.12	0.12	0	10	No
Isopropyl Alcohol	1.4	1.4	0	65	No
Manganese	3.2E-04	3.2E-04	1.4E-06	0.333	No
Mercury	5.9E-07	1.5E-06	9.2E-07	0.001	No
Methylene diphenyl isocyanate (MDI)	0.022	0.022	0	0.003	No
Methyl Isobutyl Ketone	2.7E-02	2.7E-02	0	13.7	No
Molybdenum	4.5E-03	4.6E-03	3.9E-06	0.667	No
Naphthalene	1.4E-06	3.6E-06	2.2E-06	3.33	No
n-Butyl Alcohol	0.11	0.11	0	10	No
n-Hexane	4.1E-03	1.1E-02	6.4E-03	12	No
Pentane	5.9E-03	1.5E-02	9.2E-03	118	No
Selenium	6.8E-08	1.5E-07	8.5E-08	0.013	No
Silicon	0.03	0.03	0	0.667	No
Silicon Carbide	0.0029	0.0029	0	0.667	No
Tin	0.0038	0.0038	0	0.133	No
Toluene	0.41	4.1E-01	1.2E-05	25	No
Vanadium Oxide	1.2E-03	8.2E-06	8.2E-06	0.003	No
VM&P Naphtha	0.12	0.12	0	91.3	No

**Table 6 PRE- AND POST PROJECT NON-CARCINOGENIC TAP EMISSIONS SUMMARY  
POTENTIAL TO EMIT (Continued)**

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Xylene	0.10	0.10	0	29	No
Yttrium	0.042	0.042	0	0.067	No
Zinc	3.8E-03	3.9E-03	1.0E-04	0.667	No
Zirconium	2.4E-03	2.4E-03	0	0.333	No

Therefore, modeling is not required for any TAPs because the 24-hour average non-carcinogenic screening EL identified in IDAPA 58.01.01.585 were not exceeded.

**Carcinogenic TAP Emissions**

A summary of the estimated uncontrolled and controlled carcinogenic emissions increase of toxic air pollutants (TAP) is provided in the following table. The estimated controlled emissions increases of TAP were below applicable emissions screening levels (EL). Estimated controlled TAP emissions were below the annual major source threshold.

Pre- and post project, as well as the change in, carcinogenic TAP emissions are presented in the following table:

**Table 6 PRE- AND POST PROJECT CARCINOGENIC TAP EMISSIONS SUMMARY POTENTIAL TO EMIT**

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Arsenic	4.6E-07	1.1E-06	6.7E-07	1.5E-06	No
Benzene	4.8E-06	1.2E-05	7.0E-06	8.0E-04	No
Beryllium	3.4E-08	7.4E-08	4.0E-08	2.8E-05	No
Cadmium	2.7E-06	6.4E-06	3.7E-06	3.7E-06	No
Chromium (VI)	1.4E-06	1.4E-06	0	5.6E-07	No
Formaldehyde	4.3E-04	6.8E-04	2.5E-04	5.1E-04	No
3-Methylchloranthene	5.1E-09	1.1E-08	6.0E-09	2.5E-06	No
Nickel	1.1E-04	1.2E-04	7.0E-06	2.7E-05	No
Polyaromatic Hydrocarbon	1.7E-06	3.8E-06	2.0E-06	9.1E-05	No
Polycyclic Organics	3.2E-08	7.1E-08	3.8E-08	2.0E-06	No

a) Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Therefore, modeling is not required for any TAPs because the annual average carcinogenic screening EL identified in IDAPA 58.01.01.586 was not exceeded.

**Post Project HAP Emissions**

The following table presents the post project potential to emit for HAP pollutants from the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 7 HAP EMISSIONS SUMMARY POTENTIAL TO EMIT**

HAP Pollutants	PTE (T/yr)
Arsenic	4.9E-06
Benzene	5.2E-05
Beryllium	3.3E-07
Cadmium	2.8E-05
Chromium	4.1E-04
Cobalt	2.0E-04
Dichlorobenzene	3.0E-05
Formaldehyde	3.0E-03
Hexane	4.4E-02
Hydrogen Chloride	5.6E-02
Hydrogen Flouride	9.7E-02
Lead	1.5E-05
Manganese	2.4E-04
MDI	6.7E-02
Mercury	6.4E-06
Methyl Ishobutyl Ketone	3.1E-01
Naphthalene	1.6E-05
Nickel	5.2E-04
Polycyclic Organic Matter	3.1E-07
Selenium	6.5E-07
Toluene	5.0E-02
Xylene	1.2E-02

### ***Ambient Air Quality Impact Analyses***

The estimated emission rates of NO<sub>2</sub> and TAPs from this project exceeded applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline<sup>1</sup>. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAPs). No additional modeling was required for this PTC modification. E-mails between DEQ and Torf Environmental detailing this determination are provided in Appendix B.

## **REGULATORY ANALYSIS**

### ***Attainment Designation (40 CFR 81.313)***

The facility is located in Ada County, which is designated as attainment or unclassifiable for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

<sup>1</sup> Criteria pollutant thresholds in Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

### ***Permit to Construct (IDAPA 58.01.01.201)***

IDAPA 58.01.01.201 Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the proposed new emissions sources. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

### ***Tier II Operating Permit (IDAPA 58.01.01.401)***

IDAPA 58.01.01.401 Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

### ***Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)***

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for all criteria pollutants or 10 tons per year for any one HAP or 25 tons per year for all HAPs combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006.113 and the requirements of IDAPA 58.01.01.301 do not apply.

### ***PSD Classification (40 CFR 52.21)***

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52.21(b)(1). Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is/is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

### ***NSPS Applicability (40 CFR 60)***

The facility is not subject to any NSPS requirements.

### ***NESHAP Applicability (40 CFR 61)***

The facility is not subject to any NESHAP requirements in 40 CFR 61.

### ***MACT Applicability (40 CFR 63)***

40 CFR 63, Subpart WWWW      **National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations**

§ 63.11504      Am I subject to this subpart?

In accordance with §63.11504(a), this facility is subject to this subpart because the facility will be operated as an area source of HAP. The facility is a source of HAP that is not a major source of HAP, is not located at a major source, and is not part of a major source of HAP emissions. In addition, the facility will perform one or more activities listed in this section, including thermal spraying and dry mechanical polishing, and has emissions of one or more of the following metals: cadmium, chromium, lead, manganese, and nickel.

§ 63.11505 What parts of my plant does this subpart cover?

In accordance with §63.11505(a), this subpart applies to each thermal operation that applies one or more of the plating and polishing metal HAP and each dry mechanical polishing operation that emits one or more of the plating and polishing metal HAP. The specific operations at this facility that are subject to this subpart are the Gen5 Tube Spray Chamber, the RD1 Research and Development Spray Room, the BB1 Bonder/Blaster, and the FS1 Finishing Stand.

In accordance with §63.11505(b), this facility is an existing affected source because construction or reconstruction commenced on or before March 14, 2008.

In accordance with §63.11505(e), the facility is exempt from the obligation to obtain a permit under 40 CFR part 70 or 71 provided that a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) is not required for a reason other than becoming an area source subject to this subpart.

§ 63.11506 What are my compliance dates?

In accordance with §63.11506(a), the facility must achieve compliance with the applicable provisions of the subpart no later than July 1, 2010.

§ 63.11507 What are my standards and management practices?

In accordance with §63.11507(e), the facility must operate a capture system that captures particulate matter emissions from the dry mechanical polishing process and transports the emissions to a cartridge, fabric, or high efficiency particulate air (HEPA) filter.

In accordance with §63.11507(e)(1), the facility must operate all capture and control devices according to the manufacturer's specifications and operating instructions.

In accordance with §63.11507(e)(2), the facility must keep the manufacturer's specifications and operating instructions at the facility at all times in a location where they can be easily accessed by the operators.

§ 63.11508 What are my compliance requirements?

In accordance with §63.11508(a), the facility must submit a Notification of Compliance Status in accordance with §63.11509(b).

In accordance with §63.11508(b), the facility must be in compliance with the applicable management practices and equipment standards in this subpart at all times.

In accordance with §63.11508(c), the facility must demonstrate initial compliance by satisfying the requirements specified in paragraphs (c)(1) through (11). Paragraphs (c)(8) and (9) apply to the facility's dry mechanical polishing operation and existing permanent thermal spraying operation.

In accordance with §63.11508(c)(8)(i) through (iii), the facility must install a control system that is designed to capture PM emissions from the polishing operation and exhaust them to a cartridge, fabric, or HEPA filter. The facility must state in the Notification of Compliance Status that it has installed the control system according to the manufacturer's specifications and instructions. The facility must keep the manufacturer's operating instructions at the facility at all times in a location where they can be easily accessed by the operators.

In accordance with §63.11508(c)(9)(i) through (iii), the facility must install a control system that is designed to capture PM emissions from the thermal spraying operation and exhaust them to a water curtain, fabric filter, or HEPA filter. The facility must state in the Notification of Compliance Status that it has installed and are operating the control system according to the manufacturer's specifications and instructions. The facility must keep the manufacturer's operating instructions at the facility at all times in a location where they can be easily accessed by the operators.

In accordance with §63.11508(d)(1) and (2), the facility must demonstrate continuous compliance with the applicable management practices and equipment standards specified in the subpart. The facility must always operate and maintain all affected sources, including all air pollution control equipment. The facility must prepare an annual compliance certification according to the requirements specified in §63.11509(c) and keep it in a readily-accessible location for inspector review.

§ 63.11509 What are my notification, reporting, and recordkeeping requirements?

In accordance with §63.11509(a), the facility must submit an Initial Notification not later than 120 calendar days after July 1, 2008 and include a description of the compliance method for each affected source.

In accordance with §63.11509(b), the facility must submit a Notification of Compliance Status before close of business on July 1, 2010. In accordance with paragraphs (b)(2)(i) through (iv), the Notification of Compliance Status must include a list of affected sources and the plating and polishing metal HAP used in, or emitted by, those sources, methods used to comply with the applicable management practices and equipment standards, a description of the capture and emission control systems used to comply with the applicable equipment standards, and a statement by the owner or operator of the affected sources as to whether the source is in compliance with the applicable standards or other requirements. If the facility makes a change to any items in paragraphs (b)(2)(i),(iii), and (iv) that does not result in a deviation, an amended Notification of Compliance Status should be submitted within 30 days of the change.

In accordance with §63.11509(c), the facility must prepare an annual certification of compliance report. This report does not need to be submitted unless a deviation from the requirements of this subpart has occurred during the reporting year. In accordance with paragraphs (c)(1) through (7) of this section, the annual certification of compliance report must state whether the facility has operated and maintained the control systems according to the manufacturer's specifications and instructions, must be prepared no later than January 31 of the year immediately following the reporting period, and must be kept in a readily-accessible location for inspector review.

In accordance with §63.11509(d), if a deviation from the compliance requirements specified occurred during the year, the facility must report the deviations, along with the corrective action taken, and submit this report to the delegated authority.

In accordance with §63.11509(e), the facility must keep records of the Initial Notification and Notification of Compliance Status that was submitted and all documentation supporting those notifications, records on the occurrence and duration of each startup, shutdown, or malfunction of process equipment, records of the occurrence and duration of each malfunction of the required air pollution control and monitoring equipment, records of all required maintenance performed on the air pollution control and monitoring equipment, and the records required to show continuous compliance with each applicable management practice and equipment standard as specified in §63.11508(d).

In accordance with §63.11509(f), the facility must keep each record for a minimum of 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The facility must keep each record onsite for at least 2 years and then the records may be kept offsite for the remaining 3 years.

§ 63.11510 What General Provision apply to this subpart?

In accordance with §63.11510, the facility must comply with the requirements of the General Provisions (40 CFR part 63, subpart A) according to Table 1 of this subpart.

**Permit Conditions Review**

This section describes the permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Existing Permit Condition 1.4

*Table 1.1 lists all sources of regulated emissions in this PTC.*

**Table 1.1 SUMMARY OF REGULATED SOURCES**

<b>Permit Section</b>	<b>Source Description</b>	<b>Emissions Control</b>
2	<u>Fluoropolymer (FP) Process:</u> HVLP wet coating application spray booth with integrated Paint Pockets filters and with a Twin Cities model TB-30E4 two hp exhaust fan rated at 10,000 cfm (WETPOWC)	Integral filter unit and HVLP spray gun
2	<u>FP Process:</u> Electrostatic Halar powder coating application booth with integrated Paint Pockets filters and with a Greenheck model TCB-2-22 four hp exhaust fan rated at 4,000 cfm (WETPOWC)	Integral filter unit and an electrostatic powder application gun
2	<u>FP Process:</u> Electrostatic Teflon powder coating application booth with integrated Paint Pockets filters and with a Greenheck model TCB-2-18 four hp exhaust fan rated at 3,500 cfm (WETPOWC)	Integral filter unit and an electrostatic powder application gun
2	<u>FP Process:</u> Electrostatic Halar and Teflon powder coating application booth with integrated Paint Pockets filters and with a Greenheck model TCB-2-22 four hp exhaust fan rated at 4,000 cfm (WETPOWC)	Integral filter unit and an electrostatic powder application gun
2	<u>(FP) Process Curing Ovens:</u> One Wisconsin Oven Corp. model EWN-612-8 natural gas-fired curing oven with a heat input rating of 0.6 MMBtu/hr and two electric curing ovens (ECOVEN1)	N/A
3	<u>Sputtered Targets and Services (STS) Process:</u> Brigs model BPC-180 plasma spray application chamber with a maximum capacity of 30.4 lbs-powder/hr (GEN3)	Donaldson Torit model 20 cyclone and a MAC model 4M2F16 filter unit (MAC1) w/ high-efficiency cartridge filters
3	<u>STS Process:</u> Praxair model SG-100 plasma spray application chamber with a maximum capacity of 18.8 lbs-powder/hr (GEN4)	MAC cyclone and a MAC model 2M2F8 filter unit (MAC2) w/ high-efficiency cartridge filters
3	<u>STS Process:</u> Brigs model BPC-180 plasma spray application chamber with a maximum capacity of 30.4 lbs-powder/hr (GEN5)	Camfil-Farr cyclone and a Farr model GS24 filter unit (FARR2) w/ high-efficiency cartridge filters
3	<u>STS Process:</u> NxEdge custom manufactured research and development spray room with a maximum capacity of 70 lbs-powder/hr (RD1)	Camfil-Farr cyclone and a Farr model GS20 filter unit (FARR1) w/ high-efficiency cartridge filters

**Table 1.1 SUMMARY OF REGULATED SOURCES (continued)**

<b>Permit Section</b>	<b>Source Description</b>	<b>Emissions Control(s)</b>
3	<u>STS Process:</u> NxEdge custom manufactured bonder/blaster wire bonder and abrasive blasting cabinet with a maximum capacity of 200 lbs-media/hr (BB1)	MAC cyclone and a MAC filter unit (MAC3) w/ Farr model HMPTUF cartridge filters
3	<u>STS Process:</u> NxEdge custom manufactured finishing stand manual sanding operation with a maximum capacity of 2 tubes/hr (FS1)	MAC cyclone and a MAC filter unit (MAC3) w/ Farr model HMPTUF cartridge filters
4	<u>Advanced Engineered Coating (AEC) Process:</u> Automated application spray booth (SBU1)	Camfil-Farr GS-16 filter unit w/ high-efficiency cartridge filters (SBUFARR1)
4	<u>AEC Process:</u> Automated application spray booth (SBU2)	Camfil-Farr GS-16 filter unit w/ high-efficiency cartridge filters (SBUFARR2)
4	<u>AEC Process:</u> Automated application spray booth (SBU3)	Camfil-Farr GS-16 filter unit w/ high-efficiency cartridge filters (SBUFARR3)
4	<u>AEC Process:</u> Spray booth air supply heater (SBUHTR1)	N/A
4	<u>AEC Process:</u> Spray booth air supply heater (SBUHTR2)	N/A
4	<u>AEC Process:</u> Spray booth air supply heater (SBUHTR3)	N/A
4	<u>AEC Process:</u> Two Titan Abrasive Systems model 4836 RPD media blasting cabinets with a Dayton model 5C532 exhaust fan rated at 2,970 cfm, located in the AEC area (AECPP1)	Titan model 4836 RPD filter units (AECPP1)
4	<u>AEC Process:</u> Two Titan Abrasive Systems model 4848 RPD media blasting cabinets with a Greenheck model H-Cube-098 exhaust fan rated at 1,180 cfm and an Empire model PF-3648 media blasting cabinet, all located in the FP area (AECPP2)	Titan model 4848 RPD filter units and an Empire model DCM-80A filter unit (AECPP2)
5	<u>Cleaning and Refurbishing (C&amp;R) Process:</u> Two Empire Abrasive Equipment model PF-3648 media blasting cabinets (CAMBC)	Empire model DCM-80A filter units

Revised Permit Condition 4

The emission sources regulated by this permit are listed in the following table.

**Table 10 REGULATED SOURCES**

Source Descriptions	Emission Controls
<p><u>Fluoropolymer (FP) Process:</u> HVLP wet coating application spray booth with integrated Paint Pockets filters and with a Twin Cities model TB-30E4 two hp exhaust fan rated at 10,000 cfm (WETPOWC)</p>	<p>Integral filter unit and HVLP spray gun</p>
<p><u>FP Process:</u> Electrostatic Halar powder coating application booth with integrated Paint Pockets filters and with a Greenheck model TCB-2-22 four hp exhaust fan rated at 4,000 cfm (WETPOWC)</p>	<p>Integral filter unit and an electrostatic powder application gun</p>
<p><u>FP Process:</u> Electrostatic Teflon powder coating application booth with integrated Paint Pockets filters and with a Greenheck model TCB-2-18 four hp exhaust fan rated at 3,500 cfm (WETPOWC)</p>	<p>Integral filter unit and an electrostatic powder application gun</p>
<p><u>FP Process:</u> Electrostatic Halar and Teflon powder coating application booth with integrated Paint Pockets filters and with a Greenheck model TCB-2-22 four hp exhaust fan rated at 4,000 cfm (WETPOWC)</p>	<p>Integral filter unit and an electrostatic powder application gun</p>
<p><u>(FP) Process Curing Ovens:</u> One Wisconsin Oven Corp. model EWN-612-8 natural gas-fired curing oven with a heat input rating of 0.6 MMBtu/hr and two electric curing ovens (ECOVEN1)</p>	<p>N/A</p>
<p><u>Sputtered Targets and Services (STS) Process:</u> Brigs model BPC-180 plasma spray application chamber with a maximum capacity of 30.4 lbs-powder/hr (GEN3)</p>	<p>Donaldson Torit model 20 cyclone and a MAC model 4M2F16 filter unit (MAC1) w/ high-efficiency cartridge filters</p>
<p><u>STS Process:</u> Praxair model SG-100 plasma spray application chamber with a maximum capacity of 18.8 lbs-powder/hr (GEN4)</p>	<p>MAC cyclone and a MAC model 2M2F8 filter unit (MAC2) w/ high-efficiency cartridge filters</p>
<p><u>STS Process:</u> Brigs model BPC-180 plasma spray application chamber with a maximum capacity of 30.4 lbs-powder/hr (GEN5)</p>	<p>Camfil-Farr cyclone and a Farr model GS24 filter unit (FARR2) w/ high-efficiency cartridge filters</p>

**Table 11 REGULATED SOURCES (continued)**

<i>Source Descriptions</i>	<i>Emission Controls</i>
<u>STS Process:</u> <i>NxEdge custom manufactured research and development spray room with a maximum capacity of 70 lbs-powder/hr (RD1)</i>	<i>Camfil-Farr cyclone and a Farr model GS20 filter unit (FARR1) w/ high-efficiency cartridge filters</i>
<u>STS Process:</u> <i>NxEdge custom manufactured bonder/blaster wire bonder and abrasive blasting cabinet with a maximum capacity of 200 lbs-media/hr (BB1)</i>	<i>MAC cyclone and a MAC filter unit (MAC3) w/ Farr model HMPTUF cartridge filters</i>
<u>STS Process:</u> <i>NxEdge custom manufactured finishing stand manual sanding operation with a maximum capacity of 2 tubes/hr (FS1)</i>	<i>MAC cyclone and a MAC filter unit (MAC3) w/ Farr model HMPTUF cartridge filters</i>
<u>Advanced Engineered Coating (AEC) Process:</u> <i>Automated application spray booth (SBU1)</i>	<i>Camfil-Farr GS-16 filter unit w/ high-efficiency cartridge filters (SBUFARR1)</i>
<u>AEC Process:</u> <i>Automated application spray booth (SBU2)</i>	<i>Camfil-Farr GS-16 filter unit w/ high-efficiency cartridge filters (SBUFARR2)</i>
<u>AEC Process:</u> <i>Automated application spray booth (SBU3)</i>	<i>Camfil-Farr GS-16 filter unit w/ high-efficiency cartridge filters (SBUFARR3)</i>
<u>AEC Process:</u> <i>Spray booth air supply heater (SBUHTR1)</i>	<i>N/A</i>
<u>AEC Process:</u> <i>Spray booth air supply heater (SBUHTR2)</i>	<i>N/A</i>
<u>AEC Process:</u> <i>Spray booth air supply heater (SBUHTR3)</i>	<i>N/A</i>
<u>AEC Process:</u> <i>Two Titan Abrasive Systems model 4836 RPD media blasting cabinets with a Dayton model 5C532 exhaust fan rated at 2,970 cfm, located in the AEC area (AECPP1)</i>	<i>Titan model 4836 RPD filter units and a custom model MERV-8 filter (AECPP1)</i>
<u>AEC Process:</u> <i>Two Titan Abrasive Systems model 4848 RPD media blasting cabinets with a Greenheck model H-Cube-098 exhaust fan rated at 1,180 cfm and an Empire model PF-3648 media blasting cabinet, all located in the FP area (AECPP2)</i>	<i>Titan model 4848 RPD filter units, an Empire model DCM-80A filter unit, and a custom model MERV-8 filter (AECPP2)</i>
<u>Cleaning and Refurbishing (C&amp;R) Process:</u> <i>Two Empire Abrasive Equipment model PF-3648 media blasting cabinets (CAMBC)</i>	<i>Empire model DCM-80A filter units</i>
<u>West Make-Up Air Unit:</u> <i>One Greenheck model TSU-220 natural gas-fired make-up air unit with a heat input rating of 1.42 MMBtu/hr (WMAU1)</i>	<i>N/A</i>
<u>(FP) Area Make-Up Air Unit:</u> <i>One Greenheck model DGX-125 natural gas-fired make-up air unit with a heat input rating of 2.21 MMBtu/hr (NMAU1)</i>	<i>N/A</i>

This permit condition has been revised to add the west make-up air unit, and FP area make-up air unit and two custom model MERV-8 filters in the AEC process.

Existing Permit Condition 2.7

*Powder coating usage in the FP process shall not exceed 400 lb/day and 4,000 lb/yr combined for Halar™ and Teflon™ powders.*

Revised Permit Condition 11

*Powder coating usage in the FP process shall not exceed 400 lb/day and 12,000 lb/yr combined for Halar™ and Teflon™ powders.*

This permit condition has been revised to increase the annual powder coating usage limit.

Removed Permit Condition 3.7

*Chromium usage in the plasma spray powders and wires applied in the RD1 research and development spray room operation shall not exceed 500 lb/yr.*

This permit condition has been removed because the facility is now subject to 40 CFR 63, Subpart WWWWWW and no further demonstration of preconstruction compliance with TAP standards is required.

Removed Permit Condition 3.9

*Nickel in the bond wires applied in the BB1 bonder blaster operation shall not exceed 11,000 lbs/yr. Chromium in the bond wires applied in the BB1 bonder blaster operation shall not exceed 10,000 lbs/yr.*

This permit condition has been removed because the facility is now subject to 40 CFR 63, Subpart WWWWWW and no further demonstration of preconstruction compliance with TAP standards is required.

New Permit Condition 34

*Affected Source – 40 CFR 63.11504 Am I subject to this subpart?*

*In accordance with 40 CFR 63.11504, the permittee is subject to this subpart. The permittee is an area source of HAPs and will perform one or more activities listed in the section, including thermal spraying and dry mechanical polishing, and has emissions of one or more of the following metals: cadmium, chromium, lead, manganese, and nickel.*

This permit condition has been added because the facility conducts thermal spraying and dry mechanical polishing processes and is subject to 40 CFR 63, Subpart WWWWWW.

New Permit Condition 35

*Affected Source – 40 CFR 63.11505 What parts of my plant does this subpart cover?*

*In accordance with 40 CFR 63.11505(a), this subpart applies to each thermal operation that applies one or more of the plating and polishing metal HAP and each dry mechanical polishing operation that emits one or more of the plating and polishing metal HAP. The specific operations at this facility that are subject to this subpart are the Gen5 Tube Spray Chamber, the RD1 Research and Development Spray Room, the BB1 Bonder/Blaster, and the FS1 Finishing Stand.*

*In accordance with 40 CFR 63.11505(b), this permittee is an existing affected source because construction or reconstruction commenced on or before March 14, 2008.*

*In accordance with 40 CFR 63.11505(e), the permittee is exempt from the obligation to obtain a permit under 40 CFR part 70 or 71 provided that a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) is not required for a reason other than becoming an area source subject to this subpart.*

This permit condition has been added because the facility is an existing affected source and is subject to 40 CFR 63, Subpart WWWWWW.

### New Permit Condition 36

*Compliance Date – 40 CFR 63.11506 What are my compliance dates?*

*In accordance with 40 CFR 63.11506(a), the permittee must achieve compliance with the applicable provisions of the subpart no later than July 1, 2010.*

This permit condition has been added because the facility must achieve compliance with 40 CFR 63, Subpart WWWW by July 1, 2010.

### New Permit Condition 37

*Standards and Management Practices – 40 CFR 63.11507 What are my standards and management practices?*

*In accordance with 40 CFR 63.11507(e), the permittee must operate a capture system that captures particulate matter emissions from the dry mechanical polishing process and transports the emissions to a cartridge, fabric, or high efficiency particulate air (HEPA) filter.*

*In accordance with 40 CFR 63.11507(e)(1), the permittee must operate all capture and control devices according to the manufacturer's specifications and operating instructions.*

*In accordance with 40 CFR 63.11507(e)(2), the permittee must keep the manufacturer's specifications and operating instructions at the facility at all times in a location where they can be easily accessed by the operators.*

This permit condition has been added to summarize the standards and management practices in accordance with 40 CFR 63, Subpart WWWW.

### New Permit Condition 38

*Compliance Requirements – 40 CFR 63.11508 What are my compliance requirements?*

*In accordance with 40 CFR 63.11508(a), the permittee must submit a Notification of Compliance Status in accordance with 40 CFR 63.11509(b).*

*In accordance with 40 CFR 63.11508(b), the permittee must be in compliance with the applicable management practices and equipment standards in this subpart at all times.*

*In accordance with 40 CFR 63.11508(c), the permittee must demonstrate initial compliance by satisfying the requirements specified in paragraphs (c)(1) through (11). Paragraphs (c)(8) and (9) apply to the permittee's dry mechanical polishing operation and existing permanent thermal spraying operation.*

*In accordance with 40 CFR 63.11508(c)(8)(i) through (iii), the permittee must install a control system that is designed to capture PM emissions from the polishing operation and exhaust them to a cartridge, fabric, or HEPA filter. The permittee must state in the Notification of Compliance Status that it has installed the control system according to the manufacturer's specifications and instructions. The permittee must keep the manufacturer's operating instructions at the facility at all times in a location where they can be easily accessed by the operators.*

*In accordance with 40 CFR 63.11508(c)(9)(i) through (iii), the permittee must install a control system that is designed to capture PM emissions from the thermal spraying operation and exhaust them to a water curtain, fabric filter, or HEPA filter. The permittee must state in the Notification of Compliance Status that it has installed and are operating the control system according to the manufacturer's specifications and instructions. The permittee must keep the manufacturer's operating instructions at the facility at all times in a location where they can be easily accessed by the operators.*

*In accordance with CFR 63.11508(d)(1) and (2), the permittee must demonstrate continuous compliance with the applicable management practices and equipment standards specified in the subpart. The permittee must always operate and maintain all affected sources, including all air pollution control equipment. The permittee must prepare an annual compliance certification according to the requirements specified in 40 CFR 63.11509(c) and keep it in a readily-accessible location for inspector review.*

This permit condition has been added to summarize the compliance requirements in accordance with 40 CFR 63, Subpart WWWW.

### New Permit Condition 39

*Notification, Reporting, and Recordkeeping – 40 CFR 63.11509 What are my notification, reporting, and recordkeeping requirements?*

*In accordance with 40 CFR 63.11509(a), the permittee must submit an Initial Notification not later than 120 calendar days after July 1, 2008 and include a description of the compliance method for each affected source.*

*In accordance with 40 CFR 63.11509(b), the permittee must submit a Notification of Compliance Status before close of business on July 1, 2010. In accordance with paragraphs (b)(2)(i) through (iv), the Notification of Compliance Status must include a list of affected sources and the plating and polishing metal HAP used in, or emitted by, those sources, methods used to comply with the applicable management practices and equipment standards, a description of the capture and emission control systems used to comply with the applicable equipment standards, and a statement by the owner or operator of the affected sources as to whether the source is in compliance with the applicable standards or other requirements. If the permittee makes a change to any items in paragraphs (b)(2)(i), (iii), and (iv) that does not result in a deviation, an amended Notification of Compliance Status should be submitted within 30 days of the change.*

*In accordance with 40 CFR 63.11509(c), the permittee must prepare an annual certification of compliance report. This report does not need to be submitted unless a deviation from the requirements of the subpart has occurred during the reporting year. In accordance with paragraphs (c)(1) through (7) of this section, the annual certification of compliance report must state whether the facility has operated and maintained the control systems according to the manufacturer's specifications and instructions, must be prepared no later than January 31 of the year immediately following the reporting period, and must be kept in a readily-accessible location for inspector review.*

*In accordance with 40 CFR 63.11509(d), if a deviation from the compliance requirements specified occurred during the year, the permittee must report the deviations, along with the corrective action taken, and submit this report to the delegated authority.*

*In accordance with 40 CFR 63.11509(e), the permittee must keep records of the Initial Notification and Notification of Compliance Status that was submitted and all documentation supporting those notifications, records on the occurrence and duration of each startup, shutdown, or malfunction of process equipment, records of the occurrence and duration of each malfunction of the required air pollution control and monitoring equipment, records of all required maintenance performed on the air pollution control and monitoring equipment, and the records required to show continuous compliance with each applicable management practice and equipment standard as specified in 40 CFR 63.11508(d).*

*In accordance with 40 CFR 63.11509(f), the permittee must keep each record for a minimum of 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The permittee must keep each record onsite for at least 2 years and then the records may be kept offsite for the remaining 3 years.*

This permit condition has been added to summarize the notification, reporting, and recordkeeping requirements in accordance with 40 CFR 63, Subpart WWWW.

### New Permit Condition 40

*General Provisions – 40 CFR 63.11510 What General Provisions apply to this subpart?*

*In accordance with 40 CFR 63.11510, the permittee must comply with the requirements of the General Provisions (40 CFR part 63, subpart A) according to Table 1 of this subpart.*

**Table 6 NESHAP 40 CFR 63, SUBPART A – SUMMARY OF GENERAL PROVISIONS**

Section	Subject	Summary of Section Requirements												
63.13	Addresses	<p><i>All requests, reports, applications, submittals, and other communications associated with 40 CFR 63, Subpart(s) shall be submitted to:</i></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;"><i>Director Air and Waste</i></td> <td style="width: 10%; text-align: center;"><i>and</i></td> <td style="width: 40%; text-align: center;"><i>Boise Regional Office</i></td> </tr> <tr> <td style="text-align: center;"><i>US EPA</i></td> <td style="text-align: center;"><i>and</i></td> <td style="text-align: center;"><i>Department of Environmental Quality</i></td> </tr> <tr> <td style="text-align: center;"><i>1200 Sixth Avenue</i></td> <td></td> <td style="text-align: center;"><i>1445 N. Orchard</i></td> </tr> <tr> <td style="text-align: center;"><i>Seattle, WA 98101</i></td> <td></td> <td style="text-align: center;"><i>Boise, ID 83706</i></td> </tr> </table>	<i>Director Air and Waste</i>	<i>and</i>	<i>Boise Regional Office</i>	<i>US EPA</i>	<i>and</i>	<i>Department of Environmental Quality</i>	<i>1200 Sixth Avenue</i>		<i>1445 N. Orchard</i>	<i>Seattle, WA 98101</i>		<i>Boise, ID 83706</i>
<i>Director Air and Waste</i>	<i>and</i>	<i>Boise Regional Office</i>												
<i>US EPA</i>	<i>and</i>	<i>Department of Environmental Quality</i>												
<i>1200 Sixth Avenue</i>		<i>1445 N. Orchard</i>												
<i>Seattle, WA 98101</i>		<i>Boise, ID 83706</i>												
63.4(a)	Prohibited Activities	<p><i>No permittee must operate any affected source in violation of the requirements of 40 CFR 63 in accordance with 40 CFR 63.4(a). No permittee subject to the provisions of this part shall fail to keep records, notify, report, or revise reports as required under this part.</i></p>												
63.4(b)	Circumvention/ Fragmentation	<p><i>No permittee shall build, erect, install or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard.</i></p> <p><i>Fragmentation which divides ownership of an operation, within the same facility among various owners where there is no real change in control, will not affect applicability in accordance with 40 CFR 63.4(c).</i></p>												
63.6(b) and (c)	Compliance Dates	<p><i>The permittee of any new or reconstructed source must comply with the relevant standard as specified in 40 CFR 63.6(b).</i></p> <p><i>The permittee of a source that has an initial startup before the effective date of a relevant standard must comply not later than the standard's effective date in accordance with 40 CFR 63.6(b)(1).</i></p> <p><i>The permittee of a source that has an initial startup after the effective date of a relevant standard must comply upon startup of the source in accordance with 40 CFR 63.6(b)(2).</i></p> <p><i>The permittee of any existing sources must comply with the relevant standard by the compliance date established in the applicable subpart or as specified in 40 CFR 63.6(c).</i></p> <p><i>The permittee of an area source that increases its emissions of hazardous air pollutants such that the source becomes a major source shall be subject to relevant standards for existing sources in accordance with 40 CFR 63.6(c)(5).</i></p>												

**Table 6 (continued) NESHAP 40 CFR 63, SUBPART A – SUMMARY OF GENERAL PROVISIONS**

Section	Subject	Summary of Section Requirements
63.10	Recordkeeping and Reporting Requirements	<p><i>The permittee shall maintain files of all required information recorded in a form suitable and readily available for expeditious inspection and review in accordance with 40 CFR 63.10(b)(1). The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site.</i></p> <p><i>The permittee shall maintain relevant records of the following in accordance with 40 CFR 63.10(b)(2);</i></p> <p><i>The occurrence and duration of each startup or shutdown when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards;</i></p> <p><i>The occurrence and duration of each malfunction of operation or the required air pollution control and monitoring equipment;</i></p> <p><i>All required maintenance performed on the air pollution control and monitoring equipment;</i></p> <p><i>Actions taken during periods of startup or shutdown when the source exceeded applicable emission limitations in a relevant standard and when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan; or</i></p> <p><i>Actions taken during periods of malfunction when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan;</i></p> <p><i>All information necessary, including actions taken, to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan (see 40 CFR 63.6(e)(3)) when all actions taken during periods of startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), and malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events);</i></p> <p><i>If an permittee determines that his or her stationary source that emits one or more HAP, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to a relevant standard because of limitations on the source's potential to emit or an exclusion, the permittee must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first in accordance with 40 CFR 63.10(b).</i></p>

This permit condition has been added because the facility must comply with the General Provisions of 40 CFR Part 63.

Existing Permit Condition 4.8

*New aluminum oxide blasting media usage in the AECPP1 media blasting operation shall not exceed 50,000 lbs/yr.*

Revised Permit Condition 48

*New aluminum oxide blasting media usage in the AECPP1 media blasting operation shall not exceed 150,000 lbs/yr.*

This permit condition has been revised to increase the aluminum oxide blasting media usage limit in AECPP1.

Existing Permit Condition 4.9

*New aluminum oxide blasting media usage in the AECPP2 media blasting operation shall not exceed 50,000 lbs/yr.*

Revised Permit Condition 49

*New aluminum oxide blasting media usage in the AECPP2 media blasting operation shall not exceed 120,000 lbs/yr.*

This permit condition has been revised to increase the aluminum oxide blasting media usage limit in AECPP2.

Existing Permit Condition 4.9

*Total new blasting media usage in the AECPP2 media blasting operation shall not exceed 55,000 lbs/yr..*

Revised Permit Condition 50

*Total new blasting media usage in the AECPP2 media blasting operation shall not exceed 125,000 lbs/yr.*

This permit condition has been revised to increase the new blasting media usage limit in AECPP2.

New Permit Condition 75

*Fresh air is supplied to the FP area spray booths with a make-up air unit (NMAUI) located outside to the north of the building. The combustion gases are emitted via the FP spray booth exhaust. Fresh air is also supplied to the northwest manufacturing area with a make-up air unit (WMAUI) located outside to the west of the building. The combustion gases are emitted via the northwest area exhaust.*

This permit condition has been added for the process description of the two existing previously unpermitted make-up air units.

New Permit Condition 76

**Table 11 MAKE-UP AIR UNIT PROCESS DESCRIPTION**

<i>Emissions Units / Processes</i>	<i>Emission Control Devices</i>	<i>Emission Points</i>
<i>Make-up Air Unit (NMAUI)</i>	<i>N/A</i>	<i>Exhaust stack EP-3</i>
<i>Make-up Air Unit (WMAUI)</i>	<i>N/A</i>	<i>Exhaust stack EP-17</i>

This permit condition has been added for the emission controls description of the two existing previously unpermitted make-up air units.

New Permit Condition 77

*Emissions from the two make-up air unit stacks, or any other stack, vent, or functionally equivalent opening associated with the make-up air units, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.*

This permit condition has been added for the opacity limits of the two existing previously unpermitted make-up air units.

New Permit Condition 78

*The NMAUI and WMAUI make-up air units shall only combust natural gas as fuel.*

This permit condition has been added for the operating requirements of the two existing previously unpermitted make-up air units.

## **PUBLIC REVIEW**

### ***Public Comment Opportunity***

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

## APPENDIX A – EMISSIONS INVENTORIES

NxEdge PTC Modification

**Table 3-1:  
AEC Area Emissions- Part Preparation Room One**

AEC Source: AECPT1	Equipment	Proposed PTC Mod Media Use <sup>1</sup>	Component	Component Conc. (max wt%)	Media Cycles <sup>2</sup>	Emission Factor (lb/ton media) <sup>3</sup>	Uncontrolled Emissions		Cyclone Efficiency (%) <sup>4</sup>	Cabinet Filter Efficiency (%) <sup>5</sup>	Exhaust Filter Efficiency (%) <sup>6</sup>	Controlled Emissions	
		lb/yr					lb/hr	lb/yr				lb/hr	lb/yr
		Titan 4836RPD Blast Cabinets (2)					150000	Aluminum Oxide				100%	6

TAP Emissions Summary	TAP Type (24 hr or Annual Avgd EL)	Pre-Project Emissions (lb/hr)	Post Project Emissions (lb/hr)
Aluminum	585 (24 hr)	0.0034	0.0025

NxEdge requests no change to permitted emission rate(s)

Criteria Pollutant Emissions Summary	Pre-Project Emissions		Post Project Emissions	
	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
PM <sub>10</sub>	0.0034	0.0150	0.0025	0.0045

NxEdge requests no change to permitted emission rate(s)

- Notes: 1. Daily media usage based on 150 operating days per year.  
 2. NxEdge reuses media for six cycles before discarding.  
 3. From "Abrasive Blasting (Confined)," Bay Area AQMD, May 15, 1998, [www.baaqmd.gov/pm/handbook/s11c01pd.htm](http://www.baaqmd.gov/pm/handbook/s11c01pd.htm)  
 4. Per EPA-CICA Air Pollution Technology Fact Sheet for cyclones, average PM<sub>10</sub> cyclone efficiency is 60%.  
 5. Titan Cabinets are equipped with EMI filters with a control efficiency of 99.8%. For calculations, 99% efficiency used.  
 6. Exhaust filters are MERV-8 with a PM<sub>2.5-10</sub> efficiency of 75%.

**Table 3-2:  
AEC Area Emissions- Parts Preparation Room Two**

AEC Source: AECPP2	Equipment	Proposed PTC Mod Media Use <sup>1</sup>	Component	Component Conc. (max wt%)	Media Cycles <sup>2</sup>	Emission Factor (lb/ton media) <sup>3</sup>	Uncontrolled Emissions		Cyclone Efficiency (%) <sup>4</sup>	Cabinet Filter Efficiency (%) <sup>4</sup>	Exhaust Filter Efficiency (%) <sup>4</sup>	Controlled Emissions	
		lb/yr					lb/hr	lb/yr				lb/hr	lb/yr
		Titan 4848RPD Blast Cabinets (2)					120000	Aluminum Oxide				100%	6
Empire PF3048 Blast Cabinet	5000	Silicon Carbide	100%	6	20	1.04	300	60%	99%	75%	0.0010	0.30	

TAP Emissions Summary	TAP Type (24 hr or Annual Avgd EL)	Pre-Project Emissions (lb/hr)	Post-Project Emissions (lb/hr)
Aluminum	585 (24 hr)	0.0034	0.0033
Silicon Carbide	505 (24 hr)	0.0029	0.0010

NxEdge requests no change to permitted emission rate(s)

Criteria Pollutant Emissions Summary	Pre-Project Emissions		Post-Project Emissions	
	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
PM <sub>10</sub>	0.0063	0.0038	0.0044	0.0038

NxEdge requests no change to permitted emission rate(s)

- Notes:
- Daily media usage conservatively based on only 90 operating days per year.
  - NxEdge reuses media for six cycles before discarding.
  - From "Abrasive Blasting (Confined)," Bay Area AQMD, May 15, 1998, [www.baaqmd.gov/jpmi/handbook/a11c01pd.htm](http://www.baaqmd.gov/jpmi/handbook/a11c01pd.htm)
  - No manufacturer information provided on Titan cyclone, however, per EPA-CICA Air Pollution Technology Fact Sheet for cyclones, average PM<sub>10</sub> cyclone efficiency is 60%. Per Empire Abrasive Equipment, reclaimer cyclone efficiency is 99%. For calculation, 60% efficiency used for cyclones.
  - Titan Cabinets are equipped with EMI filters with a control efficiency of 99.8%. Per Empire Abrasive Equipment, control efficiency is 99%. For calculations, 99% efficiency is used.
  - Exhaust filters are MERV-8 with an average PM<sub>2.5-10</sub> efficiency of 75%.

Table 3-3:  
Fluoropolymer Area Emissions- Curing and Burnoff Oven Emissions

FP Source: ECOVEN1	Curing Emissions	Coating	Restricted Daily Use	Restricted Annual Use	Pollutant	Curing Emission Factor	Post Project Emissions		Pre-Project Emissions	
			lb/day	lb/yr		wt% Feed	lb/hr	tons/yr	lb/hr	tons/yr
		Halar and Teflon Fluoropolymer Powders	400	12000	Fluoride <sup>1</sup>	0.5%	0.0333	0.0300	0.0333	0.0100
				VOC <sup>2</sup>	5.0%	0.3333	0.300	0.3333	0.100	

FP Source: ECOVEN1	Burnoff Emissions	Coating	Description	CAS Number	Coating Content	Component Conc. (wt%)	Potential Burnoff Products	Maximum Generation Rate (wt% coating)	Parts Coating <sup>3</sup> (lbs/day)	Uncontrolled Emissions (lb/hr)	Uncont. Emissions (ton/yr)	No change with PTC Mod.
		Halar	Ellyhena chloro trifluoro ethylene (C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Cl) <sub>n</sub>	26101-46-6	Carbon	33.2%	CO <sup>4</sup>	7.8%	1.21	0.0039	0.017	
					Chlorine	24.5%	HCl <sup>5</sup>	25.2%		0.013	0.056	
					Fluorine	39.4%	HF (as F) <sup>5</sup>	39.4%		0.020	0.087	
					Hydrogen	2.6%						

FP Source: ECOVEN1	Combustion Gas Emissions	Fuel-Burning Equipment	Rated Output (MMBtu/hr)	On-Line Rating		Fuel	Fuel Rate <sup>6</sup> (scfh)	Emission Factors AP-42 Tables 1.4-1 to 1.4-4		Uncontrolled Emissions (ECOVEN1)		No change with PTC Mod.
				Actual	Used			Pollutant	lb/10 <sup>4</sup> scf	lb/hr	tons/yr	
								Curing Oven Wisconsin Oven Corporation EWN-612-8	0.60	1040	8760	
								CO	84	6.2E-02	0.27	
								PM <sub>10</sub>	7.6	5.6E-03	0.02	
								SO <sub>2</sub>	0.6	4.4E-04	0.002	
								VOC	5.6	4.0E-03	0.02	
								Lead	0.0005	3.7E-07	1.6E-06	
								Arsenic	2.0E-07	1.4E-10	6.3E-10	
								Barium	4.3E-06	3.2E-09	1.4E-08	
								Benzene	2.1E-06	1.5E-09	6.6E-09	
								Cadmium	1.1E-06	7.9E-10	3.5E-09	
								Chromium	1.4E-06	1.0E-09	4.4E-09	
								Cobalt	8.2E-08	6.1E-11	2.7E-10	
								Copper	8.3E-07	6.1E-10	2.7E-09	
								Dichlorobenzene	1.2E-06	8.7E-10	3.8E-09	
								Formaldehyde	7.4E-05	5.4E-08	2.4E-07	
								Hexane	1.8E-03	1.3E-06	5.7E-06	
								Manganese	3.7E-07	2.7E-10	1.2E-09	
								Mercury	2.5E-07	1.9E-10	8.2E-10	
								Molybdenum	1.1E-06	7.9E-10	3.5E-09	
								Naphthalene	6.0E-07	4.4E-10	1.9E-09	
								Nickel	2.1E-06	1.5E-09	6.6E-09	
								Pentane	2.5E-03	1.9E-06	8.2E-06	
								Toluene	3.3E-06	2.5E-09	1.1E-08	
								Vanadium	2.3E-06	1.7E-09	7.3E-09	
								Zinc	2.8E-05	2.1E-08	9.2E-08	

Notes:

1. PFA weight loss has been measured at 0.20-0.25 wt% per hour with gases such as carbonyl fluoride produced. Tests on other polymers have generated ppm per hour levels of tetrafluoroethylene (TFE), 0.5 wt% fluoride generation used for these calculations. Source: The DuPont Company, "Guide to the Safe Handling of Fluoropolymer Resins," Third Edition.
2. Powder coatings have 0.5-5% VOC content. Actual average emissions curing emissions are 1% VOC, but 5% VOC generation used for these calculations. Source: RTI 2000 Coatings Guide (and referenced in EPA EIP Vol II, Chap 7, p. 7.2-7).
3. Based on 20 typical parts ("smurfs") with a fluoropolymer coating weight of 0.0605 lbs per part treated per day in burn-off oven. Actual operations are a few parts burned off 1-3 times per month.
4. Assume 10% conversion of carbon to carbon monoxide.

Table 3-4: Modification Combustion Emissions (8760 hours per year)

Modification (NMAU1 & WMAU1) Duty =  
3,6273 MMBtu/hr +

1,020 MMBtu/MMscf = 3.56E-03 MMscf/hr  
24 hr/day  
8,760 hr/yr<sup>3</sup>

Fuel Use:  
0.085 MMscf/day  
31.152 MMscf/year

Criteria Air Pollutants	Emission Factor <sup>1</sup>	Emissions		Modeling Threshold	Modeling Required?	Modeling Threshold	Modeling Required?
		lb/MMscf	lb/hr				
NO <sub>2</sub>	100	0.36	1.56	0.2 lb/hr	YES	2.4 lb/hr	No
				1.2 T/yr	YES	14 T/yr	No
CO	84	0.30	1.31	15 lb/hr	No	175 lb/hr	No
				0.22 lb/hr	No	2.6 lb/hr	No
PM <sub>10</sub>	7.6	0.027	0.12	0.054 lb/hr	No	0.63 lb/hr	No
				0.35 T/yr	No	4.1 T/yr	No
PM <sub>2.5</sub>	7.6	0.027	0.12	0.21 lb/hr	No	0.9 lb/hr	No
				1 T/yr	No	7 T/yr	No
SO <sub>2</sub>	0.6	2.1E-03	9.3E-03	40 T/yr	No		
VOC	5.5	2.0E-02	8.6E-02	0.6 T/yr	No		
Lead	0.0005	1.8E-05	7.8E-06	10 lb/mo	No		
		1.3E-03 lb/month					
Total Criteria Emissions (ton/yr) =				3.08			

Hazardous & Toxic Air Pollutants (HAP & TAP)	Emission Factor <sup>1</sup>	Emissions		Modeling Threshold	Modeling Required?	
		lb/MMscf	lb/hr <sup>2</sup>			T/yr
<b>PAH HAPs</b>						
2-Methylnaphthalene	2.40E-05	8.53E-08	3.7E-07	9.1E-05 lb/hr	No	
3-Methylchloranthrene	1.80E-06	6.40E-09	2.8E-08	2.5E-06 lb/hr	No	
Acenaphthene	1.80E-06	6.40E-09	2.8E-08	9.1E-05 lb/hr	No	
Acenaphthylene	1.80E-06	6.40E-09	2.8E-08	9.1E-05 lb/hr	No	
Anthracene	2.40E-06	8.53E-09	3.7E-08	9.1E-05 lb/hr	No	
Benzo(a)anthracene	1.80E-06	6.40E-09	2.8E-08		See POM	
Benzo(a)pyrene	1.20E-06	4.27E-09	1.9E-08	2.0E-06 lb/hr	See POM	
Benzo(b)fluoranthene	1.80E-06	6.40E-09	2.8E-08		See POM	
Benzo(g,h,i)perylene	1.20E-06	4.27E-09	1.9E-08	9.1E-05 lb/hr	No	
Benzo(k)fluoranthene	1.80E-06	6.40E-09	2.8E-08		See POM	
Chrysene	1.80E-06	6.40E-09	2.8E-08		See POM	
Dibenzo(a,h)anthracene	1.20E-06	4.27E-09	1.9E-08		See POM	
Fluoranthene	3.00E-06	1.07E-08	4.7E-08	9.1E-05 lb/hr	No	
Fluorene	2.80E-06	9.96E-09	4.4E-08	9.1E-05 lb/hr	No	
Indeno(1,2,3-cd)pyrene	1.80E-06	6.40E-09	2.8E-08		See POM	
Naphthalene	6.10E-04	2.17E-06	9.5E-06	3.33 lb/hr	No	
Naphthalene	6.10E-04	2.17E-06	9.5E-06	9.1E-05 lb/hr	No	
Phenanthrene	1.70E-05	6.05E-08	2.6E-07	9.1E-05 lb/hr	No	
Pyrene	5.00E-06	1.78E-08	7.8E-08	9.1E-05 lb/hr	No	
Polycyclic Org. Matter (POM, 7-PAH Group)		4.05E-08	1.8E-07	2.0E-06 lb/hr	No	
<b>Non-PAH HAPs</b>						
Benzene	2.10E-03	7.47E-06	3.3E-05	8.0E-04 lb/hr	No	
Dichlorobenzene	1.20E-03	4.27E-06	1.9E-05	20 lb/hr	No	
Formaldehyde	7.50E-02	2.67E-04	1.2E-03	5.1E-04 lb/hr	No	
Hexene	1.80E+00	6.40E-03	2.8E-02	12 lb/hr	No	
Toluene	3.40E-03	1.21E-05	5.3E-05	25 lb/hr	No	
<b>Non-HAP Organic Compounds</b>						
Pentane	2.60E+00	9.25E-03	4.0E-02	118 lb/hr	No	
<b>Metals (HAPs)</b>						
Arsenic	2.00E-04	7.11E-07	3.1E-06	1.5E-05 lb/hr	No	
Barium	4.40E-03	1.56E-05	6.6E-05	0.033 lb/hr	No	
Beryllium	1.20E-05	4.27E-08	1.9E-07	2.8E-05 lb/hr	No	
Cadmium	1.10E-03	3.91E-06	1.7E-05	3.7E-06 lb/hr	YES	
Chromium	1.40E-03	4.98E-06	2.2E-05	0.033 lb/hr	No	
Cobalt	8.40E-05	2.99E-07	1.3E-06	0.0033 lb/hr	No	
Copper	8.50E-04	3.02E-06	1.3E-05	0.013 lb/hr	No	
Manganese	3.80E-04	1.35E-06	5.9E-06	0.087 lb/hr	No	
Mercury	2.60E-04	9.25E-07	4.0E-06	0.003 lb/hr	No	
Molybdenum	1.10E-03	3.91E-06	1.7E-05	0.333 lb/hr	No	
Nickel	2.10E-03	7.47E-06	3.3E-05	2.7E-05 lb/hr	No	
Selenium	2.40E-05	8.53E-08	3.7E-07	0.013 lb/hr	No	
Vanadium	2.30E-03	8.18E-06	3.6E-05	0.003 lb/hr	No	
Zinc	2.90E-02	1.03E-04	4.5E-04	0.667 lb/hr	No	
Total HAP Emissions (ton/yr) =				0.030		

\*\*Cadmium emissions are below EL at 94% annual on-line rating. Air handler heaters are used only during cold weather, so per IDEQ actual on-line rating is 75% max.

Notes:

1. Emission factors taken from AP-42, Section 1.4 *Natural Gas Combustion* (7/98)
2. TAPs lb/hr emissions are 24-hour averages unless shown in bold. Bold emissions are annual averages for carcinogens.
3. Air heaters are used only during cold weather, so actual on-line rating is significantly less.

Table 3-5: Modification Combustion Emissions (8234 hours per year)

Modification (NMAU1 & WMAU1) Duty =

3,6273 MMBtu/hr +

1,020 MMBtu/MMscf = 3.56E-03 MMscf/hr

Fuel Use:

Operating Assumptions:

24 hr/day

0.085 MMscf/day

8,234 hr/yr<sup>2</sup>

29.283 MMscf/year

Criteria Air Pollutants	Emission Factor <sup>1</sup> lb/MMscf	Emissions		Modeling Threshold General	Modeling Required?	Modeling Threshold Case-by-Case	Modeling Required?
		lb/hr	T/yr				
NO <sub>2</sub>	100	0.36	1.46	0.2 lb/hr 1.2 T/yr	YES YES	2.4 lb/hr 14 T/yr	No No
CO	84	0.30	1.23	15 lb/hr	No	175 lb/hr	No
PM <sub>10</sub>	7.6	0.027	0.11	0.22 lb/hr	No	2.6 lb/hr	No
PM <sub>2.5</sub>	7.6	0.027	0.11	0.054 lb/hr 0.35 T/yr	No No	0.63 lb/hr 4.1 T/yr	No No
SO <sub>2</sub>	0.6	2.13E-03	8.78E-03	0.21 lb/hr 1 T/yr	No No	0.9 lb/hr 7 T/yr	No No
VOC	5.5	1.96E-02	8.05E-02	10 T/yr	No		
Lead	0.0005	1.78E-06	7.32E-06	0.6 T/yr	No		
		1.28E-03	lb/month	10 lb/mo	No		
Total Criteria Emissions (ton/yr) = 2.89							

Hazardous & Toxic Air Pollutants (HAP & TAP)	Emission Factor <sup>1</sup> lb/MMscf	Emissions		Modeling Threshold TAP Screening Emission Level	Modeling Required?
		lb/hr <sup>2</sup>	T/yr		
<b>PAH HAPs</b>					
2-Methylnaphthalene	2.40E-05	8.02E-08	3.5E-07	9.1E-05 lb/hr	No
3-Methylchloranthrene	1.80E-06	6.02E-09	2.6E-08	2.5E-06 lb/hr	No
Acenaphthene	1.80E-06	6.02E-09	2.6E-08	9.1E-05 lb/hr	No
Acenaphthylene	1.80E-06	6.02E-09	2.6E-08	9.1E-05 lb/hr	No
Anthracene	2.40E-06	8.02E-09	3.5E-08	9.1E-05 lb/hr	No
Benzo(a)anthracene	1.80E-06	6.02E-09	2.6E-08		See POM
Benzo(a)pyrene	1.20E-06	4.01E-09	1.8E-08	2.0E-06 lb/hr	See POM
Benzo(b)fluoranthene	1.80E-06	6.02E-09	2.6E-08		See POM
Benzo(g,h,i)perylene	1.20E-06	4.01E-09	1.8E-08	9.1E-05 lb/hr	No
Benzo(k)fluoranthene	1.80E-06	6.02E-09	2.6E-08		See POM
Chrysene	1.80E-06	6.02E-09	2.6E-08		See POM
Dibenzo(a,h)anthracene	1.20E-06	4.01E-09	1.8E-08		See POM
Fluoranthene	3.00E-06	1.00E-08	4.4E-08	9.1E-05 lb/hr	No
Fluorene	2.80E-06	9.38E-09	4.1E-08	9.1E-05 lb/hr	No
Indeno(1,2,3-cd)pyrene	1.80E-06	6.02E-09	2.6E-08		See POM
Naphthalene	6.10E-04	2.17E-06	8.9E-06	3.33 lb/hr	No
Naphthalene	6.10E-04	2.04E-06	8.9E-06	9.1E-05 lb/hr	No
Phenanthrene	1.70E-05	5.68E-08	2.5E-07	9.1E-05 lb/hr	No
Pyrene	5.00E-06	1.67E-08	7.3E-08	9.1E-05 lb/hr	No
Polycyclic Org. Matter (POM, 7-PAH Group)		3.81E-08	1.7E-07	2.0E-06 lb/hr	No
<b>Non-PAH HAPs</b>					
Benzene	2.10E-03	7.02E-06	3.1E-05	8.0E-04 lb/hr	No
Dichlorobenzene	1.20E-03	4.27E-06	1.8E-05	20 lb/hr	No
Formaldehyde	7.50E-02	2.51E-04	1.1E-03	5.1E-04 lb/hr	No
Hexane	1.80E+00	6.40E-03	2.6E-02	12 lb/hr	No
Toluene	3.40E-03	1.21E-05	5.0E-05	25 lb/hr	No
<b>Non-HAP Organic Compounds</b>					
Pentane	2.60E+00	9.25E-03	3.0E-02	110 lb/hr	No
<b>Metals (HAPs)</b>					
Arsenic	2.00E-04	6.69E-07	2.9E-06	1.5E-06 lb/hr	No
Barium	4.40E-03	1.58E-05	6.4E-05	0.033 lb/hr	No
Beryllium	1.20E-05	4.01E-08	1.8E-07	2.8E-05 lb/hr	No
Cadmium	1.10E-03	3.68E-06	1.6E-05	3.7E-06 lb/hr	No
Chromium	1.40E-03	4.98E-06	2.0E-05	0.033 lb/hr	No
Cobalt	8.40E-05	2.99E-07	1.2E-06	0.0833 lb/hr	No
Copper	8.50E-04	3.02E-06	1.2E-05	0.013 lb/hr	No
Manganese	3.80E-04	1.35E-06	5.6E-06	0.067 lb/hr	No
Mercury	2.60E-04	9.25E-07	3.8E-06	0.003 lb/hr	No
Molybdenum	1.10E-03	3.91E-06	1.6E-05	0.333 lb/hr	No
Nickel	2.10E-03	7.02E-06	3.1E-05	2.7E-05 lb/hr	No
Selenium	2.40E-05	8.53E-08	3.5E-07	0.013 lb/hr	No
Vanadium	2.30E-03	8.18E-06	3.4E-05	0.003 lb/hr	No
Zinc	2.90E-02	1.03E-04	4.2E-04	0.667 lb/hr	No
Total HAP Emissions (ton/yr) = 0.028					

Notes:

1. Emission factors taken from AP-42, Section 1.4 *Natural Gas Combustion (7/98)*
2. TAPs lb/hr emissions are 24-hour averages unless shown in bold. Bold emissions are annual averages for carcinogens.
3. Air heaters are used only during cold weather, so actual on-line rating is significantly less.

Table 4-1: Fluoropolymer Area Emissions- Spray Booths

FP Source: WETPOWC	Common Name (Trade Name)	Restricted Daily Use (gal/day)	Restricted Annual Use (gal/yr)	Product Specific Gravity (MSDS)	Restricted Daily Use (lb/day)	Restricted Annual Use (lb/yr)	Solids Content (MSDS wt%)	Solids Content (lb/day)	Solids Content (lb/yr)	Coating Retention <sup>1</sup> (%)	Spray Booth Filter Efficiency <sup>3</sup> (%)	No change with PTC Mod.
	Acetone	5	50	0.792	33.0	330.3	0%	0.00	0	25%	97%	
	Isopropyl Alcohol	5	50	0.805	33.6	335.7	0%	0.00	0			
	One Coat Black 954-203	5	50	0.99	41.3	412.8	33.54%	13.85	138			
	One Coat Gray 420-104	5	50	1.09	45.5	454.5	26%	11.82	118			
	One Coat Sparking	5	50	1.05	43.8	437.9	22.12%	9.69	97			
	POR-15 Rust Preventative	0.20	50	1.6	2.7	667.2	70%	1.87	467			
	Primer Black 420-703	5	50	1.14	47.5	475.4	30.4%	14.45	145			
	Primer Black One Coat 959-203	5	50	1.14	47.5	475.4	26.56%	12.53	125			
	Halar and Teflon Fluoropolymer Powders	--	--	--	400	12000	100%	400	12000			

Criteria Pollutants Emissions Summary	Fluoropolymer Spray Booths	Pre-Project Emissions		Post Project Emissions	
		lb/hr	tons/yr	lb/hr	tons/yr
	PM <sub>10</sub>	0.310	0.042	0.103	0.042
VOC	9.62	1.20	9.62	1.20	

Hazardous Pollutants Emissions Summary	Spray Booth HAPs - Combined Emissions	Controlled Emissions (ton/yr)	No change with PTC Mod.
	Formaldehyde	1.1E-03	
	MDI	0.06672	
	MIBK	0.31	
	Toluene	0.050	
	Xylene	0.012	
Total =		0.44	

Toxic Air Pollutants Emissions Summary	Fluoropolymer Spray Booths	Controlled Emissions (lb/hr)	Controlled Emissions (lb/yr)	No change with PTC Mod.
	Acetone	1.4	330	
	Aluminum	4.10E-04	0.10	
	i-Butyl Alcohol	0.12	28.5	
	n-Butyl Alcohol	0.11	26.6	
	Carbon Black	0.0022	0.5	
	Diacetone Alcohol	1.1	255	
	Formaldehyde	2.6E-04	2.3	
	IPA	1.4	335	
	MDI	0.022	133	
	MIBK	2.6	629	
	Toluene	0.41	99.1	
	1,2,4-Trimethyl benzene	0.034	8.3	
	VM&P Naphtha	0.12	28.5	
Xylene	0.10	24.8		

Notes: 1. Per AP-42, Chapter 4.2.2.12 typical spray paint retention is 25%. Typical electrostatic powder spray retention is 80%.  
 2. Paint Pockets rated removal efficiency with paint = 98.13%, arrestance with powder = 99.7%. 99% used for calculation of controlled emission rate of powder.

## **APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES**

From: "Sarah Stine" <slstine@torf.us>  
Subject: [Fwd: RE: NxEdge Boise PTC Revision Change 1 - Modeling Not Required if 3.62 MMBtu/hr nat gas space heaters are included]  
Date: Wed, May 4, 2011 2:52 pm  
To: slstine@torf.us

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----- Original Message -----  
Subject: RE: NxEdge Boise PTC Revision Change 1 - Modeling Not Required if 3.62 MMBtu/hr nat gas space heaters are included  
From: Cheryl.Robinson@deq.idaho.gov  
Date: Thu, April 28, 2011 2:57 pm  
To: slstine@torf.us  
Cc: Kevin.Schilling@deq.idaho.gov  
Darrin.Pampain@deq.idaho.gov  
mtorf@torf.us

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Dear Sarah,

NxEdge, located at 7500 Mossy Cup in Boise, has proposed to revise their existing permit to incorporate emissions reductions as described in the March 7, 2011 email below. DEQ determined that modeling was not required for those changes, as noted in the emails below.

On April 15, 2011, DEQ received an email from Torf Environmental's Sarah Stine noting a change in the project scope to add two natural gas direct-fired air heaters (seasonally operated) with a combined heat input capacity of 3.62 MMBtu/hr. As shown below, one-hour NOx emissions exceed the Level I (normally approvable) modeling thresholds. The only other NOx sources at NxEdge were permitted in 2008, prior to implementation of the 1-hour NOx NAAQS: 3 SBU heaters and a curing oven, with total heat input capacity of 2.91 MMBtu/hr.

As shown in the tables below, the increase in NO2 emissions from these two new heaters slightly exceeds the DEQ Level I (generally approvable) pound per hour threshold but is below the Level I annual threshold. DEQ presumed that these new heaters' maximum run time per hour (as the heater cycles on and off) is 60%. DEQ determined that 1-hr NOx modeling is not required for this project based on the following:

- The average exhaust velocity and stack height for the two new sources is roughly equal to the values used in developing the threshold.
- The pound per hour threshold is intended to ensure that the increase in emissions results in ambient impacts less than the applicable significance level. The increase in hourly NOx emissions is only about 6.5% greater than the pound-per-hour threshold.
- Existing NOx emission sources are limited to small heaters and a small curing oven, with total heat input capacity of 2.9 MMBtu/hr and total NOx emissions of 0.29 lb/hr.
- An EPA and state/local agency work group is currently working on additional guidance for 1-hr NOx modeling. Until the guidance is issued, it is unclear that the additional workload to run and review 1-hr NOx modeling for this facility is justified, given the relatively small size of the units and comparison of the emissions and stack parameters with the existing DEQ 1-hr NOx modeling thresholds.

Best regards,

Cheryl

Cheryl A. Robinson, P.E.  
Air Quality Engineer/Modeling Analyst  
Idaho Department of Environmental Quality  
1410 N. Hilton  
Boise, Idaho 83706  
Tel: (208) 373-0220 Main: (208) 373-0502

cheryl.robinson@deq.idaho.gov  
www.deq.idaho.gov

From: Cheryl.Robinson@deq.idaho.gov  
Subject: FW: NxEdge PTC Modification  
Date: Tue, April 19, 2011 3:48 pm  
To: slstine@torf.us  
Cc: Darrin.Pampaian@deq.idaho.gov,mtorf@torf.us

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Hi Sarah:

I estimated the heating season for Boise based on an average outside temperature of 65 F (see PDF).

Total maximum days when heating might be needed = about 6708 hrs/yr (see spreadsheet)

Presuming heating operations 6708 hr/yr drops the cadmium emissions below the EL. I'm still looking at the NO<sub>2</sub> emissions, but **need the stack height and temperatures for each stack (see spreadsheet)**.

It's up to Darrin P (or assigned permit writer) to decide whether to impose an operating limit or maximum natural gas usage if this assumption is used to develop the EL.

Best regards,

Cheryl

**Cheryl A. Robinson, P.E.**  
Air Quality Engineer/Modeling Analyst  
Idaho Department of Environmental Quality  
1410 N. Hilton  
Boise, Idaho 83706  
Tel: (208) 373-0220 Main: (208) 373-0502  
cheryl.robinson@deq.idaho.gov  
www.deq.idaho.gov

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**From:** Sarah Stine [/src/compose.php?send\_to=slstine@torf.us]  
**Sent:** Friday, April 15, 2011 9:50 AM  
**To:** Cheryl Robinson  
**Cc:** Darrin Pampaian; mark  
**Subject:** NxEdge PTC Modification

Hi Cheryl-

There is a change to the scope of the NxEdge PTC Modification and we need some modeling guidance.

Two natural-gas, direct-fired air heaters (seasonally operated) need to be added to the permit. The combined design input duty of these units is 3.62 MMBtu/hr.

I've attached a spreadsheet with the estimated combined emissions at 100% of design, 8760 hours per year.

For comparison, the duties of the already-permitted NG units are shown at the top.

Emissions from the additional units are below the standard modeling thresholds except for two pollutants, NO2 and cadmium.

NO2 emissions are just above the standard modeling threshold limits but well below Case by Case. Can NxEdge use the Case by Case thresholds for NO2? Info on the emission points for the combustion units is provided at the top of the spreadsheet. I've also attached a plot plan showing the location of the emission points.

NO2 was modeled for the already permitted units back in 2004 using ISC3. Highest annual impact (assuming 100%, 8760 hr operation) was 7.8 ug/m3, 25 m W of the building.

Cadmium is just over the screening emission level. At a 94% annual on-line factor, the Cd emissions are below the EL. I'm wondering if using an on-line factor less than 100% in the emission calculations will prompt the addition of a permit condition to track natural gas use. NxEdge already collects a lot of data for the permit and would like to avoid additional requirements, if possible. 94% is still very conservative in a location like Boise. Perhaps Darrin P. is the one to answer this one.

Please let me know if you require any additional information. I appreciate your assistance.

Best Regards,  
Sarah

Sarah Stine, P.E.  
slstine@torf.us  
208.571.2393 FAX: 208.345.8285

TORF  
Environmental Management  
www.torf.us

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**Attachments:**

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20110401 NxEdge Plot Plan- Markup.pdf
Size: 90 k
Type: application/pdf
Info: 20110401 NxEdge Plot Plan- Markup.pdf
20110414 Air Heaters w DEQ comments 041911.xlsx
Size: 38 k
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Info: 20110414 Air Heaters w DEQ comments 041911.xlsx

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From: Cheryl Robinson  
Sent: Monday, March 07, 2011 4:26 PM  
To: Sarah Stine (sstine@torf.us); Mark Torf (mtorf@torf.us)  
Cc: William Rogers; Darrin Pampaian; Kevin Schilling  
Subject: NxEdge Boise PTC Revision - Modeling Not Required  
Importance: High

Dear Sarah,

Based on the discussion during today's pre-application meeting and DEQ's followup review of the pertinent Idaho air quality regulations, modeling will not be required for the proposed permit-to-construct (PTC) revisions to adjust the annual limits for powder coating and abrasive blasting at the NxEdge, Inc., facility located at 7500 W. Mossy Cup in Boise, Idaho. This determination is based on the description provided during the pre-application meeting of the proposed permit changes, i.e., no short-term or annual increase in emissions of criteria pollutants or toxic air pollutants compared to the currently permitted amounts:

- Manufacturer information reportedly supports revising the PM capture efficiency for powder coating emission controls from 97% to ~99%, allowing an increase in annual coating use with no increase in emissions;
- Adding a second control device to abrasive blasting emission point(s) would allow an increase in annual blasting media use with no increase in emissions.
- Changes to the physical plant are expected to be limited to installation of an additional control device on abrasive blasting emissions.

IDAPA 58.01.01.203, PERMIT REQUIREMENTS FOR NEW AND MODIFIED STATIONARY SOURCES states:

No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following:

01. Emission Standards. The stationary source or modification would comply with all applicable local, state or federal emission standards.
02. NAAQS. The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.

Because the criteria pollutant emissions increase associated with this proposed project is projected to be zero, the ambient impact associated with the change in emissions can be reasonably presumed to be zero (or perhaps even negative, if the additional control device is installed).

03. Toxic Air Pollutants. Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.

Because the emissions increase associated with this proposed project is projected to be zero, and no new TAPs are projected to be emitted as a result of the proposed project, compliance with the relevant TAPs increments is assured.

Please ensure that a copy of this email is included as part of the PTC application. If you have any questions, please don't hesitate to contact me.

Best regards,

Cheryl

Cheryl A. Robinson, P.E.

Air Quality Engineer/Modeling Analyst  
Idaho Department of Environmental Quality  
1410 N. Hilton  
Boise, Idaho 83706  
Tel: (208) 373-0220 Main; (208) 373-0502

cheryl.robinson@deq.idaho.gov  
</src/compose.php?send\_to=cheryl.robinson@deq.idaho.gov>  
www.deq.idaho.gov

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## APPENDIX C – FACILITY DRAFT COMMENTS

**The following comments were received from the facility on August 11, 2011:**

**Facility Comment:** On page 7 of the SOB, Table 1, please modify the equipment control efficiencies to reflect the efficiencies used in the permit analysis.

**DEQ Response:** This change has been made so that the equipment control efficiencies match the control efficiencies used in the emissions estimates.

**Facility Comment:** In the Emissions Inventories section of the SOB on page 9, the heater PTE is based on 8,234 hours per year (94% on-line).

**DEQ Response:** This clarification has been made regarding the hours of operations for NMAU1 and WMAU1.

**Facility Comment:** On page 10 of the SOB, Table 3, the post project CO is the same as pre-project. There is a small amount of CO from burnoff emissions. See Table 3-3 in Appendix A.

**DEQ Response:** This change has been made to Table 3.

**Facility Comment:** On page 10 of the SOB, Table 3, the lead numbers for NMAU1 and WMAU1 should be shifted up one row.

**DEQ Response:** This change has been made to Table 3 to correctly show the lead emissions for NMAU1 and WMAU1.

**Facility Comment:** In Permit Condition 31 of the PTC, with the operating condition changes, NxEdge requests a specific listing of which TAPs and HAPs should be monitored and recorded (as done in Permit Conditions 15 and 58).

**DEQ Response:** This clarification has been made in Permit Condition 31 to require monitoring and recording of PM<sub>10</sub>, aluminum, and silicon.

**Facility Comment:** In Permit Condition 41 of the PTC, compressed air should be replaced with argon.

**DEQ Response:** This change has been made to Permit Condition 41.

## APPENDIX D – PROCESSING FEE

## PTC Fee Calculation

**Instructions:**

Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

**Company:** NxEdge, Inc.  
**Address:** 7500 W. Mossy Cup Street  
**City:** Boise  
**State:** Idaho  
**Zip Code:** 83709  
**Facility Contact:** Carl Niemeier  
**Title:** VP Operations  
**AIRS No.:** 001-00202

- N** Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
- Y** Did this permit require engineering analysis? Y/N
- N** Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

<b>Emissions Inventory</b>			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO <sub>x</sub>	1.5	0	1.5
SO <sub>2</sub>	0.0	0	0.0
CO	1.2	0	1.2
PM10	0.1	0	0.1
VOC	0.3	0	0.3
TAPS/HAPS	0.0	0	0.0
<b>Total:</b>	<b>0.0</b>	<b>0</b>	<b>3.1</b>
Fee Due	<b>\$ 2,500.00</b>		