

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT  
AIR QUALITY DIVISION**

February 28, 2011

**PERMIT TO INSTALL  
13-11**

**ISSUED TO**  
Bell Induction Heating, Inc.

**LOCATED AT**  
41241 Edison Lake Road  
Belleville, Michigan

**IN THE COUNTY OF**  
Wayne

**STATE REGISTRATION NUMBER**  
M3749

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Natural Resources and Environment. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

**January 21, 2011**

DATE PERMIT TO INSTALL APPROVED:

**February 28, 2011**

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

**PERMIT TO INSTALL**

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant/Measurement Abbreviations</b>	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H <sub>2</sub> S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO <sub>x</sub>	Oxides of Nitrogen
MDNRE	Michigan Department of Natural Resources and Environment (Department)	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than or equal to 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than or equal 2.5 microns diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pound per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonably Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO <sub>2</sub>	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
TEQ	Toxicity Equivalence Quotient	yr	Year
VE	Visible Emissions		

\* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Natural Resources and Environment, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Natural Resources and Environment. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
  
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
  
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Flexible Group ID</b>
EUQUENCH1	338 gallon capacity agitated oil quench tank for quenching parts that have been heated by induction.	FGQUENCH
EUQUENCH2	180 gallon capacity agitated oil quench tank for quenching parts that have been heated by induction.	FGQUENCH
EUQUENCH3	135 gallon capacity agitated oil quench tank for quenching parts that have been heated by induction.	FGQUENCH
EUQUENCH4	180 gallon capacity agitated oil quench tank for quenching parts that have been heated by induction.	FGQUENCH
EUTEMPEROVEN1	Natural gas fired tempering oven that operates at 400 degrees Fahrenheit.	FGOVENS
EUTEMPEROVEN2	Natural gas fired tempering oven that operates at 400 degrees Fahrenheit.	FGOVENS
EUTEMPEROVEN3	Natural gas fired tempering oven that operates at 400 degrees Fahrenheit.	FGOVENS

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FGQUENCH	Four (4) agitated oil quench tanks	EUQUENCH1, EUQUENCH2, EUQUENCH3, EUQUENCH4
FGOVENS	Three (3) natural gas fired tempering ovens	EUTEMPEROVEN1, EUTEMPEROVEN2, EUTEMPEROVEN3
FGQUENCH&OVENS	Four (4) agitated oil quench tanks and Three (3) natural gas fired tempering ovens	EUQUENCH1, EUQUENCH2, EUQUENCH3, EUQUENCH4, EUTEMPEROVEN1, EUTEMPEROVEN2, EUTEMPEROVEN3

**The following conditions apply to: FGQUENCH&OVENS**

**DESCRIPTION:** Four (4) agitated oil quench tanks and three (3) natural gas fired tempering ovens

**Emission Units:** EUQUENCH1, EUQUENCH2, EUQUENCH3, EUQUENCH4, EUTEMPEROVEN1, EUTEMPEROVEN2, EUTEMPEROVEN3

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period/ Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
1.PM10	2.0 TPY	12-month rolling time period as determined at the end of each calendar month	FGQUENCH&OVENS	SC VI.2	R 336.1331

**II. MATERIAL LIMITS**

1. The permittee shall not use more than 46 gallons/month of quench oil (with a density of 7.2 lbs/gal) to replenish lost quench oil in FGQUENCH&OVENS. **(R 336.1331)**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

NA

**IV. DESIGN/EQUIPMENT PARAMETERS**

NA

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1331)**
2. The permittee shall calculate the PM10 emission rate from FGQUENCH&OVENS for each calendar month, using a material balance for quench oil usage (Appendix A):
  - a) Quench oil purchased or usage rate to replenish lost quench oil (column A)
  - b) Amount of spent oil sent off-site for recycling (column B).

- c) Amount of spent oil or sludge sent off-site for disposal (column C).
- d) Amount of oil spilled (column D).
- e) Emission calculations determining the monthly emission rates in pounds and tons per calendar month.
- f) Emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records on file at the facility, in the format specified in Appendix A or an alternate format that has been approved by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1331)

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter/Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVQUENCH1	8	20	R 336.1225, R 336.1901
2. SVQUENCH2	12	20	R 336.1225, R 336.1901
3. SVQUENCH3	8	20	R 336.1225, R 336.1901
4. SVQUENCH4	8	20	R 336.1225, R 336.1901
5. SVOVEN1	10	20	R 336.1225, R 336.1901
6. SVOVEN2	12	20	R 336.1225, R 336.1901
7. SVOVEN3	12	20	R 336.1225, R 336.1901

**IX. OTHER REQUIREMENTS**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**APPENDIX A**

**MONTHLY QUENCH-OIL BALANCE  
 AND PM10 EMISSION ESTIMATE**

Bell Induction Heating, Inc  
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<b>Month</b>	<b>A <sup>(1)</sup> Purchased</b>		<b>B <sup>(2)</sup> Reclaimed</b>		<b>C <sup>(3)</sup> Disposed</b>		<b>D <sup>(4)</sup> Spill/Clean-Up</b>		<b>E <sup>(5)</sup> PM10 Emitted</b>	
	Gal.	Lbs.	Gal.	Lbs.	Gal.	Lbs.	Gal.	Lbs.	Gal.	Lbs.
<b>PM10 Emitted</b> per calendar month (tons), <b>F = E/2000</b>									<b>F:</b>	
<b>PM10 Emitted</b> per 12-month rolling time period (tons), <b>G = F + TOTAL OF 11 PREVIOUS MONTHS</b>									<b>G:</b>	

(1) New oil purchased to replenish lost quench oil.

(2) Spent oil transported to off-site reclaimer.

(3) Oil in sludge generated from tank cleaning; sent to off-site disposal facility.

(4) Oil lost to spill or used for clean-up.

(5) Balance of oil lost in air emissions:  $E = A - B - C - D$ .

**Note:** A, B, C, and D are the amounts or volumes of liquid oil only and should not include any solid content or residues. "Lbs." in A, B, C, D, and E is determined as follows:  $Lbs. = Gal. \text{ usage} \times 7.2 \text{ lbs/gal}$  (Density from MSDS)