

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b> Large Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	1 of 6
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	REVIEWED BY	SMKE
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**PERMIT TO OPERATE EVALUATION**  
**PO no PC**

<b>Applicant's Name</b>	JOHANSON DIELECTRICS, INC.
<b>Company I.D.</b>	91259
<b>Mailing Address</b>	15191 BLEDSOE ST., SYLMAR, CA 91342
<b>Equipment Address</b>	SAME AS ABOVE

**EQUIPMENT DESCRIPTION**

**APPLICATION NO. 477130**

Title V “de minimis significant permit revision” Plan – 1<sup>st</sup> Revision

**APPLICATION NO. 477126:** (PO no PC, modification to A/N 272173, PO F21285)

MODIFICATION TO THE AIR POLLUTION CONTROL SYSTEM, CONSISTING OF:

1. ELECTROSTATIC PRECIPITATOR, FIBER-DYNE, INC., MODEL NO. ESP 2, 5'-6" DIA. X 12'-8" H.
2. EXHAUST SYSTEM WITH ONE 5 HP EXHAUST BLOWER VENTING TWELVE 219 EXEMPT OVENS.

BY VENTING FOUR ADDITIONAL 219 EXEMPT OVENS TO BRING THE TOTAL NUMBER OF OVENS VENTED TO THE ELECTROSTATIC PRECIPITATOR TO SIXTEEN.

**APPLICATION NO. 477128:** (PO no PC, modification to A/N 283726, PO F15415)

MODIFICATION TO THE CASTING MACHINE # 1, JOHANSON, ASSET NO. 1801, CONTINUOUS BELT-DRIVE TYPE, 2'-0" W. X 32'-2" L. X 5'-5" H., 7.4 KW ELECTRICALLY HEATED, WITH A 1/3-HP CONVEYOR BELT:

BY INCREASING THE LENGTH OF THE CASTING MACHINE FROM 32'-2 " TO 38'-0".

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**BACKGROUND**

Johanson Dielectrics Inc. (JDI) manufactures ceramic capacitors. They presently operate a number of permitted equipment such as casting machines, afterburners, ovens, nickel plating lines, solder leveling machine, solvent reclaim still, baghouse, etc. under their Title V permit (I D. # 91259). This facility submitted Application #477126 & 477128 on 01/10/08 as Class III for Permits to Operate the above described equipment. Application #477126 is for modification of an existing electrostatic precipitator (A/N 272173, PO F21285) to vent four additional Rule 219 exempt drying ovens (electrically heated) which brings the total number of ovens vented to the system to sixteen. The modification was completed prior to obtaining a permit to construct; therefore, penalty was paid for modifying the APC system without permit. Application #477128 is for modification of an existing casting machine (A/N 283726, PO F15415) to increase the length of the machine for operational flexibility. The modification was completed prior to obtaining a permit to construct; therefore, penalty will be assessed for modifying the system without P/C.

JDI currently has a VOC emission cap of 3930 pounds per month (131 lb/day) from all casting machines at the facility. They will continue to operate under this VOC cap so there will be no increase in VOC emissions as a result of this project.

Johanson Dielectric Inc. is a Title V Group B facility. A renewal Title V permit was issued to this facility on 10-1-2006. The modification of this equipment is the 1<sup>st</sup> revision since the renewal, and is considered as a “de minimis significant permit revision” as described in the Regulation XXX evaluation.

The District database shows that the applicant has not received any odor nuisance complaints from the public. The applicant, however, received three Notice to Comply from the District one notice for not recording VOC emissions and two notices not submitting R-1426 initial compliance report. The company has achieved compliance with the district rules on follow up inspection.

**PROCESS DESCRIPTION**

This company is in the business of manufacturing capacitors for the electronics industry. The casting machine is used to apply plastic film onto a web. The emissions from the machine are vented to an afterburner. The electrostatic precipitator (ESP) is used to remove particulate emissions from the ovens. The ESP is capable of handling the extra 4 ovens based on the original evaluation and the attached name tag which indicates that the system is capable of handling 4000 cfm of air flow..

**OPERATING HOURS**

Average : 24 hour/day, 7 day/week, 52 weeks/year  
Maximum: 24 hour/day, 7 days/week, 52 weeks/year

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**DESIGN CONSIDERATIONS**

Data Provided:

Each oven stack is 10” diameter, with exhaust velocity of 250 fpm

$$Q = [(10 \text{ inch}/2)(1\text{ft}/12 \text{ inches})]^2 \times (\pi) \times (250 \text{ fpm}) = 136.4 \text{ cfm/oven}$$

Total exhaust flowrate of 16 bake out ovens = 2,182 cfm

The ESP capacity according to the manufacturer’s specifications is 4,000 cfm, therefore, the APC system is adequately designed to handle the extra load.

This ESP was source tested in 1997 and the results indicated that the particulate removal efficiency is 47.9%. This test was conducted venting 8 ovens, and PM emissions from the APC were determined to be 0.17 lb/hr or 0.02 lb/hr for each oven.

**EMISSION CALCULATIONS**

**For ESP A/N 477126** (assume PM = PM<sub>10</sub>)

AEIS – PM<sub>10</sub>:

$$R2 = (0.02 \text{ lb/hr})(16 \text{ ovens}) = 0.32 \text{ lb/hr}$$

$$R1 = (0.32 \text{ lbs/hr})/(0.479) = 0.6 \text{ lb/hr}$$

NSR use the same values as AEIS

$$30 \text{ day ave for 16 ovens} = (0.32 \text{ lb/hr})(24 \text{ hr/day}) = 7.7 \text{ lb/day (2 lb/day increase)}$$

**For casting machine A/N 477128:**

No changes in missions, data entry for AEIS and NSR will be transferred from the existing permit.

AEIS: ROG    R1 = 2.5 lb/hr  
                  R2 = 0.04 lb/hr

NSR: ROG    R1 = 517 lb/day  
                  R2 = 27 lb/day  
30-day ave = 27 lb/day (bubbled w/other casting machines)

**RULES/REGULATION EVALUATION**

**©RULE 212, PUBLIC NOTIFICATION**

**❖SECTION 212(c)(1):**

This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. This source is not located within 1,000 feet from the outer boundary of a school. Therefore, public notice will not be required by this section.

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▼ **SECTION 212(c)(2):**

This section requires a public notice for all new or modified facilities which have on-site emission increases exceeding any of the daily maximums as specified by subparagraph (g). As shown in the following table, the emission increases are below the daily maximum limits specified by Rule 212(g). Therefore, this application will not be subject to this section.

LB/DAY	CO	NOX	PM <sub>10</sub>	ROG	Lead	SOX
<b>MAX. LIMIT</b>	220	40	30	30	3	60
<b>INCREASES</b>	0	0	2	0	0	0

▼ **SECTION 212(g):**

This section requires a public notice for all new or modified sources which have on-site emission increases exceeding any of the daily maximums as specified in the table below. As shown in the following table, the emission increases are below the daily maximum limits specified. Therefore, this application will not be subject to this section.

LB/DAY	CO	NOX	PM <sub>10</sub>	ROG	Lead	SOX
<b>MAX. LIMIT</b>	220	40	30	30	3	60
<b>INCREASES</b>	0	0	2	0	0	0

▼ **SECTION 212(c)(3):**

There are no Rule 1401 TAC emission increases expected from this equipment, compliance is expected.

▫ **RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE**

The District database has no records of any visible emissions or nuisance complaints against this company and equipment.

**REGULATION XIII**

⊙ **RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

PM<sub>10</sub> EMISSIONS - ESP

The ovens vented to the ESP are exempt from written permit under Rule 219 (less than 53 cubic feet internal volume), and the PM<sub>10</sub> emissions from each oven are below 1 pound per day, therefore, BACT does not apply to this equipment.

VOC EMISSIONS – Casting machine

There is no increase in VOC emissions as a result of this modification, therefore BACT is not triggered. However, the casting machine is already vented to an afterburner to control VOC emissions, which meets BACT.

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⊙ **RULE 1303(b)(1), MODELING**

ESP: PM<sub>10</sub> emissions after modification based on the source test data are 0.32 lb/hr, the Rule 1303 Table A-1 limit is 0.41 lb/hr. Thus, modeling is not required and equipment complies with these requirements.

Casting machine: The modification to the casting machine will not result in any increase in emissions, and modeling is not required for VOC.

⊙ **RULE 1303 (b)(2), EMISSION OFFSETS**

PM<sub>10</sub> emissions are expected due to operation of the equipment but the basic equipment is exempt from written permit under Rule 219. The PM<sub>10</sub> emissions from the facility are below 4 tons/yr. Thus, offsets are not required and equipment complies with the rule requirements.

⊙ **RULE 1401, NEW SOURCE REVIEW OF CARCINOGENIC AIR CONTAMINANTS**

There are no TAC emissions expected from the Rule 219 exempt ovens (electrically heated). There is no emission increase from the casting machine. Therefore, this project is expected to comply with the requirements this rule.

**Regulation XXX:**

The proposed project is considered as a “de minimis significant permit revision” to the Title V renewal permit issued to this facility with an effective date of October 1, 2006. Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases on non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NO <sub>x</sub>	40
PM <sub>10</sub>	30
SO <sub>x</sub>	60
CO	220

Rule 3003(j) specifies that a proposed permit for Title V permit should be submitted to EPA for review. To determine if a project qualifies for a “de minimis significant permit revision”, emission increases resulting from all permit revisions that are made after the submittal of a proposed permit to EPA shall be accumulated and compared to the above threshold levels. The proposed project is the first permit revision requested by the facility since the issuance of the renewal TV facility permit. This permit revision involves the modification of an ESP by venting of four additional Rule 219 exempt ovens, and modification to a casting machine by increasing the length. The cumulative emission increases resulting from this proposed permit revision are summarized as follows:

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Revision	HAP	VOC	NOx	PM <sub>10</sub>	Sox	CO
1st Permit Revision. Modify ESP by venting four additional R-219 ovens, and modify casting machine #1 by increasing length A/N 477126 & 477128	0	0	0	2	0	0
Cumulative Total	0	0	0	2	0	0
Maximum Daily	30	30	40	30	60	220

**CONCLUSION/RECOMMENDATION**

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis significant permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.