

# ENGINEERING EVALUATION AUTHORITY TO CONSTRUCT

**Facility Name:** Solana Beach Fire Station (City of Solana Beach)  
**Equipment Type:** 34H –Emergency Standby Engine  
**Application #:** APCD2025-APP-008878  
**ID#:** APCD2014-SITE-01786  
**Equipment/Facility Address:** 500 Lomas Santa Fe Dr.  
Solana Beach, CA 92075  
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12/1/2025

 Priscilla Castanon

Priscilla Castanon  
Asst. Air Pollution Control Engineer  
Signed by: Priscilla Castanon

**Permit Engineer:**

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Joe Herzig  
Sr. Air Pollution Control Engineer

**Senior Engineer:**

## 1.0 Background

**1.1 Type of Application:** This is an application for a new engine.

**1.2 Permit History:** The equipment has not been permitted before. An application was submitted in 2024 to begin the permitting process but was cancelled due to engine details not being finalized at the time of submission.

**1.3 Facility Description:** This facility is a fire station. The site has one other active pto for a registered engine.

**1.4 Other Background Info:** No current Hearing Board actions; no permit denials, no legal settlements; not a Title V facility. This is not a Title V facility.

## 2.0 Process Description

### 2.1 Equipment Description.

Emergency Diesel Engine  
Manufacturer: Kohler Diesel,  
Model: KDI 3404TCR,  
S/N: TBD,  
Maximum Rated Horsepower: 94 BHP,  
Model Year: 2025,  
EPA Certification: Tier 3,  
Engine Family: SKHXL03.4TCG,  
Equipped with an oxidation catalyst, driving a 70 kW generator,  
Exhausting vertically through a flapper, 4.8 feet above ground.

### 2.2 Process Description.

This is a diesel powered generator to be used in situations of emergency and for limited operations for maintenance and testing purposes.

### 2.3 Emissions Controls.

This is a Tier 3 certified diesel engine with a diesel oxidation catalyst; this is included within the stock build of the engine.

### 2.4 Attachments.

Generator specification sheet.

## 3.0 Emissions

**3.1 Emissions estimate summary.** Estimated emissions from the process are shown below.

Table 1: Estimated Post-Project PTE for criteria pollutants

Compound	Hourly Emissions	Daily Emissions	Annual Emissions
	lbs/hr	lbs/day	tons/year
NOx	0.39	9.28	0.01
CO	0.00	0.07	0.00
NMHC	0.00	0.04	0.00
PM	0.00	0.11	0.00
SOx	0.00	0.02	0.00

### 3.2 Estimated Emissions Assumptions.

- Emission factors were EPA certified emission factors
- Table 1 calculations assume full load operation, 24 hours per day and total of 50 hours per year.
- Standard toxics emission factors for diesel engines: Method E15- Diesel fired engine, <=600bhp, uncontrolled, 15 ppmw sulfur fuel.
- Other standard assumptions as stated in calculation sheets

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**3.3 Emissions Calculations.**

Calculations were performed using the attached spreadsheets using standard calculation methods.

**3.4 Attachments.**

Emission Calculations.

**4.0 Applicable Rules**

**4.1 District Prohibitory Rules**

Emergency diesel engines at non-major sources are subject to the following District prohibitory rules: 50, 51, 53, 62 and 69.4.1. The proposed engine is expected to comply with all applicable requirements as shown in the table on the following page with standard permit conditions for this equipment type.

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**Table 2: Prohibitory Rule Discussion**

<b>Applicable Section</b>	<b>Requirement</b>	<b>Engine Complies?</b>	<b>Explanation</b>	<b>Condition</b>
<b>Rule 50</b>	Visible Emissions not to exceed 20% opacity or Ringlemann 1 for more than 3 minutes in a 60 minute period	Yes	Compliance with this requirement is achieved through the use of an EPA certified engine, and permit conditions will specify this requirement.	C28413
<b>Rule 51</b>	Cannot cause or contribute to a public nuisance	Yes	Due to the intermittent operation of an emergency engine that meets all emission requirements, it is anticipated that this will not cause a public nuisance. Permit conditions will prohibit this engine from causing a public nuisance.	C28414
<b>Rule 53</b>	Emissions of sulfur compounds calculated as SO <sub>2</sub> on a dry basis shall not exceed 0.05 % by volume on a dry basis.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
<b>Rule 62</b>	Sulfur content of liquid fuel shall not exceed 0.5 % sulfur by weight.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
<b>Rule 69.4.1</b>	Emission standards for NOx and CO emissions. For a new or replacement certified diesel engine, NOx emissions shall not exceed: 3.5 g/bhp-hr if 50≤bhp<100; 3.0 g/bhp-hr if 100≤bhp<175; 3.0 g/bhp-hr if 175≤bhp<750; 4.8 g/bhp-hr if bhp≥750. For a new or replacement certified diesel engine, CO emissions shall not exceed: 3.7 g/bhp-hr if 50≤bhp<100; 3.7 g/bhp-hr if	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) ensures that NOx emissions comply with this requirement. This is a 94 bhp Tier 3 engine. Both the NOx and CO emission requirements are within their designated thresholds for a replacement diesel engine.	NA

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	100≤bhp<175; 2.6 g/bhp-hr if 175≤bhp<750; 2.6 g/bhp-hr if bhp≥750.			
69.4.1(d)(2)	Engines operated on diesel fuel shall use only California Diesel Fuel.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
69.4.1(e)(3)	All engines must be equipped with a non-resettable totalizing fuel or hour meter which shall be replaced in accordance with subsection (g)(7) of this rule.	Yes	Permit conditions will require installation of a non-resettable hour meter and specify the requirements for replacement.	C28419
69.4.1(f)(2)	The owner or operator must conduct specific maintenance on the engine and control equipment, including oil change/analysis, and checking hoses and belts. Maintenance is required according to engine/control equipment manufacturer's instructions or other written procedure, at least once each calendar year.	Yes	Annual maintenance of engine according to written procedure will be required by permit conditions.	C43433
69.4.1(g)(1)	Specifies engine information that must be maintained on-site.	Yes	Manufacturer and model number, brake horsepower rating, combustion method and fuel type are contained in the permit application. Documentation of CARB diesel fuel certification and manual of recommended maintenance will be specified in permit conditions.	C45251
69.4.1(g)(2)	Requires keeping an operating log containing dates and times and purpose of each period of engine operation, cumulative operation of engine for each calendar year and maintenance records including dates maintenance is performed.	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C28415

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	Engines within 500 feet of schools must record the time of day when the engine is operated for testing and maintenance. Specific records for internal, external, and partial external power outages is required.			
69.4.1(g)(6)	Requires records of the dates and times when fuel is being combusted and cumulative operating time if claiming a commissioning exemption.	NA	The applicant has not claimed a commissioning period is needed.	NA
69.4.1(g)(7)	Requires notification to APCD within 10 calendar days of replacing an hour meter.	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C28419
69.4.1(g)(9)	Requires specified records to be maintained on-site for at least three years and made available to the District upon request.	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432
69.4.1(i)(1)	Requires periodic source testing to confirm compliance with applicable emission standards.	NA	This subsection does not apply to certified emergency engines.	NA

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### 4.2 New Source Review (NSR) Rule 20.1-20.4

This application is subject to District NSR rules. This site is considered a non-major stationary source, for each pollutant, as shown in the following table, and is therefore subject to District Rule 20.2. Calculation of emissions and determination of applicable requirements is performed in accordance with District Rule(s) 20.1 through 20.3.

**Table 3: Classification of Major/PSD Source and Modification New Source Review (NSR) Requirements**

	NOx	VOC	PM-10	PM-2.5	SOx	CO	Lead
<i>Major Source Threshold (ton/year)</i>	50	50	100	100	100	100	100
<b>Major Source? (yes/no)</b>	<b>No</b>						
<i>Major Modification Threshold (ton/year)</i>	25	25	15	10	40	100	0.6
<b>Major Modification at a Major Source?</b>	<b>No</b>						
<b>Contemporaneous Calculations Performed?</b>	<b>No</b>						
Federal Major Stationary Source Threshold (ton/year) (Severe non-attainment status)	25	25	100	100	100	100	100
<b>Federal Major Stationary Source?</b>	<b>No</b>						
<i>Federal Major Modification Threshold (ton/year) (Severe non-attainment status)</i>	25	25	15	10	40	100	0.6
<b>Federal Major Modification?</b>	<b>No</b>						
<b>Contemporaneous Net Calculations Performed</b>	<b>No</b>						
<i>PSD Threshold (ton/year)</i>	250	250	250	--	250	250	--
<i>PSD Modification Threshold (ton/year)</i>	40	40	15	--	40	100	0.6
<b>PSD New or Modification?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>		<b>No</b>

District Rule 20.2 contains requirements for Best Available Control Technology (BACT), Air Quality Impact Assessment (AQIA), Prevention of Significant Deterioration (PSD) and public notification. The requirements of this rule apply as shown in the table on the following page.

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**Table 4: New Source Review Discussion**

Rule/Requirement	Requirement	Applicability	Discussion	Condition
<b>Applicability</b>	Rule 20.2 applies to non-major sources	Yes	This is not a major source, so Rule 20.2 applies.	NA
<b>Type of application</b>	New installation, Replacement/Permit Modification	New	This engine is a new engine for the site.	NA
<b>Exemptions</b>	No exemptions apply to this equipment	NA	NA	NA
<b>20.2(d)(1) – BACT</b>				
<b>BACT - NOx</b>	Installation of BACT is required if emissions of NOx exceed 10 lbs/day	Not triggered	9.28 lbs/day for one engine. The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
<b>BACT - VOC</b>	Installation of BACT is required if emissions of VOC exceed 10 lbs/day	Not triggered	0.04 lbs/day for one engine. The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
<b>BACT - PM-10</b>	Installation of BACT is required if emissions of PM-10 exceed 10 lbs/day	Not triggered	0.11 lbs/day for one engine. The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
<b>BACT - SOx</b>	Installation of BACT is required if emissions of SOx exceed 10 lbs/day	Not Triggered	0.02 lbs/day for one engine. The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
<b>20.2(d)(2) – AQIA</b>				
<b>AQIA - NOx</b>	Required for project emission increases in excess of 25 lbs/hr, 250 lbs/day or 40 ton/yr of NOx calculated as NO2	Not Triggered	The increase in emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
<b>AQIA - PM-10</b>	Required for project emission increases in excess of 100 lbs/day or 15 ton/yr of PM-10	Not Triggered	The increase in emissions of this air contaminant from this project does not exceed any of these	NA

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			levels, so no AQIA is required.	
<b>AQIA - SOx</b>	Required for project emission increases in excess of 25 lbs/hr, 250 lbs/day or 40 ton/yr of SOx calculated as SO2	Not Triggered	The increase in emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
<b>AQIA - CO</b>	Required for project emission increases in excess of 100 lbs/hr, 550 lbs/day or 1000 ton/yr of CO	Not Triggered	The increase in emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
<b>20.2(d)(3) - PSD</b>	Applicable to source that may have a significant impact on a class I area	NA	This is not a PSD source and emissions are not expected to impact a class I area	NA
<b>20.2(d)(4) - Public Notice</b>	Requires 30 day public notice if an AQIA was required or if increase in VOC emissions from the project exceed 250 lbs/day or 40 ton/year	NA	AQIA was not required and VOC emission increase from this project does not exceed these levels.	NA

*The PTE for pollutants subject to Rule 20.2 New Source Review are below the 10 lbs/day threshold for BACT and therefore are expected to be in compliance with the regulation.*

#### 4.3 Toxic New Source Review – Rule 1200

District Rule 1200 applies to any application that is part of a project which results in an emission increase of toxic air contaminants. The rule limits the increase in acute and chronic health hazard index (HHI) to no more than one from the project and limits the increase in cancer risk from the project to no more than one in one million if the engine is not equipped with Toxics BACT (T-BACT) or no more than ten in one million if the project meets T-BACT requirements. This application is for new engine permit which results in an increase in emissions.

**Table 5: Rule 1200 Applicable Requirements and Discussion**

Question	Answer	Discussion
<b>Does the application result in an increase in toxic emissions?</b>	Yes	The application results in an increase in toxic emissions of specific trace heavy metals and organics (as shown in emission calculations section).
<b>Do any special exemptions apply to this equipment?</b>	No	No exemptions apply to this equipment
<b>Are there any other applications that are part of the project?</b>	No	There is only one engines within this project.
<b>What type of HRA was used?</b>	Refined	The project was submitted for a refined health risk assessment to evaluate the impact on the nearest receptors.
<b>Is the Project Equipped with T-BACT?</b>	No	NA
<b>Cancer Risk increase (per one million)</b>	0.395	The Cancer Risk meets the standard of one in one million.
<b>Chronic HHI</b>	<1	The Chronic HHI meets the standard of one.
<b>Acute HHI</b>	<1	The Acute HHI meets the standard of one.
<b>Passes Rule 1200?</b>	Pass	The equipment is expected to meet requirements by allowing 50 hours per year for non-emergency use.

*This new application resulted in an increase in emissions for the site. The estimated risk does not exceed the worker risk, therefore the results below are representative of worker risk.*

Maximum Individual Cancer Risk (Worker)	0.395 in one million
Chronic Noncancer Health Hazard Index (Worker)	= 3.04E-04
8-Hour Noncancer Health Hazard Index (Worker)	= No Health Data
Acute Health Hazard Index (*PMI)	= 1.90E-01

\*Point of Maximum Impact

**The proposed application is for a stationary diesel emergency engine powering an emergency generator 50 hours per year for testing and maintenance purposes. The CARB Air Toxics Control Measure (ATCM) limits non-emergency operations to 50 hours per year.**

**The estimated cancer risk for the application is less than the Rule 1200 limit of 1 in one million (not equipped with T-BACT) at 50 operating hours per year.**

#### **4.4 AB3205**

Requirements in the California Health and Safety Code in sections 42301.6 through 42301.9 (a.k.a. "AB3205 requirements") specify that prior to issuing an authority to construct for sources located within 1000 feet of a K-12 school, a 30-day public notification process must be conducted.

*This project is located within 1000 feet of Earl Warren Middle School, so a public notice is required. This section shall remain open until the public notice comment period is closed.*

#### **4.5 State and Federal Regulations.**

This engine is subject to both the State Air Toxic Control Measure for Stationary Engines (Stationary ATCM) and federal EPA issued National Emission Standards for Hazardous Air Pollutants (NESHAPs) and New Source Performance Standards (NSPS).

Applicable requirements of the Stationary ATCM include purchasing an engine certified to EPA standards and meeting specified emission standards of the rule, installing an hour meter, conducting maintenance according to a written plan, restrictions on operating the engine for purposes other than emergency use and limited (50 hours/year) use for maintenance and testing, and maintaining records to substantiate compliance with these requirements. This engine is expected to comply with all these requirements as described in the detailed analysis shown in the table following the discussion of NESHAP/NSPS requirements.

The NESHAP (subpart ZZZZ) requires that all new emergency engines comply with the rule by complying with the NSPS (subpart IIII). Applicable requirements of the NSPS include purchasing a certified engine, operating it as directed by the manufacturer, and maintaining records to substantiate compliance. These requirements closely mirror the ATCM requirements, except that the NSPS is somewhat less stringent in regards to allowable PM emission rate and contains some allowance for other types of operation not allowed by the ATCM. This means the more stringent ATCM requirements apply. A detailed analysis of NESHAP and NSPS requirements is shown in the following table.

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**Table 6a: State and Federal Requirement Discussion – Stationary ATCM**

<b>Applicable Section</b>	<b>Requirement</b>	<b>Engine Complies/Expected to Comply?</b>	<b>Explanation</b>	<b>Condition</b>
<b>Stationary ATCM</b>				
93115.3	There are no exemptions that apply to this engine	NA	This engine is not one of the engines exempted from any applicable requirements	NA
93115.4	Definitions. Permit conditions ensure that the engine only operates in a manner allowed for engines designated as "Emergency Standby"	Yes	Permit conditions require that the engine operate only as an emergency engine	C40239
93115.5	Requires the use of CARB diesel as fuel.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
93115.6(a)(1)	Prohibits non-emergency operation of an emergency engine between 7:30 AM and 3:30 PM during school days if within 500 feet of school and during all school sponsored activities if located on school grounds	Yes	Permit conditions specify this requirement.	C28415
93115.6(a)(2)	Allows for engine to be started 30 minutes prior to rotating outage	NA	Permit conditions specify this requirement.	C28560
93115.6(a)(3)(A)(1)(b)	Requires that all engines used for emergency purposes be certified to at least tier 3 standards (tier 2 for engines with a rated power in excess of 750 bhp) and have Diesel PM emissions less than 0.15 g/bhp-hr	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) with PM emission below this level satisfies this requirement. This engine is a tier 3.	NA
93115.6(a)(3)(A)(1)(c)	Restricts maintenance and testing operation to no more than 50 hours per calendar year	Yes	Permit conditions specify this requirement.	C28643

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93115.6(c)	Does not allow emergency standby engines to operate as part of "demand response programs" unless additional requirements are met	NA	Permit conditions specify this requirement.	C40907
93115.10(a)-(b)	Requires that specified information is submitted to the District as part of application package	Yes	The submitted application contained all of the required contact/location information, engine data, and emission information	NA
93115.10(d)	Requires installation of a non-resettable hour meter and for engines with DPFs, a backpressure monitor that alerts the operator when the backpressure limit of the engine is approached	Yes	Permit conditions require the installation and use of a non-resettable hour meter. Permit conditions require installation and use of a backpressure monitor between the engine and DPF. This engine does not have a DPF.	C28419
93115.10(f)	Specifies that the owner or operator must keep records and prepare a monthly summary of hours of operation and purpose (emergency, maintenance and testing, emission testing, start-up testing, other, demand response) of each period of operation	Yes	Permit conditions require that these records be kept and the summary updated monthly	C45252
93115.10(f)	Requires records of CARB diesel fuel certification	Yes	Permit conditions require that documentation of the CARB diesel certification for all fuel used be maintained	C43434
93115.10(f)	States that records must be kept on-site for at least 24 months and off-site for an additional 12 months (total 36 months)	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432
93115.13(a)	Allows the use of certification data or other emission test data to demonstrate compliance with emission limits	Yes	The manufacturer's engine rating specific emission data was used to determine compliance and for emission calculations.	NA

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93115.13(f)	For engines equipped with DPFs, allows the use of an engine certified to a PM-10 emission level of no more than 0.15 g/bhp-hr and a verified DPF in lieu of source testing (or other alternative means as listed)	NA	This engine is not equipped with a DPF.	NA
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**Table 6b: State and Federal Requirement Discussion**

Applicable Section	Requirement	Engine Complies/Expected to Comply?	Explanation	Condition
<b>NESHAP ZZZZ</b>				
<b>40 CFR 63.6590(b)-(c)</b>	Requires that new emergency engines comply with the NESHAP by complying with the applicable NSPS	Yes	See NSPS section below.	NA
<b>NSPS III</b>				
<b>40 CFR 60.4205</b>	Requires that engines meet emission limits equivalent to tier 3 levels (tier 2 for engines 750 bhp or higher)	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) satisfies this requirement. This engine is a tier 3.	NA
<b>40 CFR 60.4207</b>	Sets maximum fuel sulfur limits for fuel equivalent to CARB diesel requirements	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
<b>40 CFR 60.4209</b>	Requires installation of a non-resettable hour meter	Yes	Permit conditions require the installation and use of a non-resettable hour meter.	C28419
<b>40 CFR 60.4211(a)</b>	Requires that the engine be operated according to manufacturer's emission related instructions and that no changes are made to emission related	Yes	Permit conditions specify this requirement.	C43433

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	settings unless allowed by manufacturer			
<b>40 CFR 60.4211(c)</b>	Requires that the engine be certified under EPA regulations	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp). This engine is a certified tier 3 engine.	NA
<b>40 CFR 60.4211(e)</b>	Restricts operation of emergency engines for non-emergency purposes	Yes	Compliance ensured by permit conditions for ATCM limiting operation for maintenance and testing to no more than 50 hours, restricting non-emergency operation for only those uses allowed by the permit (maintenance and testing). ATCM requirements more stringent than NSPS.	C40239, C40907, C28643
<b>40 CFR 60.4214(b)</b>	Requires records of operation to show that engine is operated as an emergency engine	Yes	Compliance is expected and specified in permit conditions.	C45251
<b>40 CFR 60.4214(c)</b>	For engines with DPFs, requires records of corrective actions taken when the high backpressure limit is approached	NA	The engine is not equipped with a DPF.	NA
<b>40 CFR 60.7(f)</b>	Requires that all records be maintained for at least 2 years	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432

## ENGINEERING EVALUATION ATTACHMENTS

### **4.6 Title V.**

This is not a Title V facility therefore this requirement does not apply.

### **4.7 CEQA**

*CEQA Guidelines §15303 exempts construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure.*

### **5.0 Recommendations**

This equipment is expected to comply with all rules and regulations, and therefore it is recommended, that an authority to construct be issued with the following conditions.

### **6.0 Recommended Conditions**

Conditions from standard BEC APCD2020-CON-001647 are recommended. Maintenance and testing shall be limited to 50 hours per calendar year.

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All relevant attachments are uploaded to BCMS under the corresponding application numbers.