SYSTEM ENGINEERING REQUIREMENTS SPECIFICATION (SERS)

FOR THE

ANTI-TERRORISM MASS NOTIFICATION SYSTEM (ATMNS) - GIANT VOICE (GV)

January 28, 2019

Prepared by:

Project Management
OL-AF Plant 42
2501 E. Ave P
Palmdale, CA 93550

PROJECT INFORMATION

Project:	Anti-Terrorism Mass Notification System (ATMNS) – Giant Voice (GV)
Customer(s):	Plant-wide, including associated partnering organizations
Objective:	Anti-Terrorism Mass Notification System is the capability to provide real-time information to all building occupants or personnel in the immediate vicinity of a building and/or installed speaker during emergency situations.
Resources Required:	OL-AF Plant 42 Project Management (PM) OL-AF Plant 42 Civil Engineering OL-AF Plant 42 Environmental OL-AF Plant 42 Management OL-AF Plant 42 Security Force OL-AF Plant 42 Information Technology (IT) 412th CS/SCOTS (Spectrum Management) 412th CS/SC/SCXPT
Project Concept:	The objective of this project is to deploy plant-wide Anti-Terrorism Mass Notification System – Giant Voice (Outdoor Mass Notification System)
Logistics:	This project is a plant-wide effort; implementation of Giant Voice capability will depends on funding source and collective efforts with plant partnering organizations.
Security:	Coordination with Security Force for Contractor personnel access onto plant for site survey and implementation. All new equipment will need to be added to the site automated information systems security plan if applicable.
Safety:	Installation personnel will be working with electrical systems and uneven surfaces. Appropriate safety precautions will be taken to insure work place safety with all electrical systems.
Environmental:	Project Management will need to work with Environmental/CE to identify the impact of Giant Voice Tower locations.
Period of Performance	365 Days for completion from contract award date.
Project Cost:	TBD
Funding Source:	3080
Projected Start Date:	Jan 1, 2019
Projected End Date:	TBD
Project Manager	

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Notice to the Reader

The material contained in this publication is for informational purposes only and is subject to change without notice. Refer to the Change History to determine the revision level of this publication.

1. Introduction

1.1 Purpose

This System Engineering Requirements Specification (SERS) will document the requirements for the Anti-Terrorism Mass Notification System (ATMNS) - Giant Voice (GV) for OL-AF Plant-42.

1.2 Project Overview

This requirement is for a turn-key plant-wide ATMNS-GV for personnel alerting across OL-AF Plant-42. This system shall have the capability of providing real-time information to all personnel located on plant. The system shall provide voice signals, Music and Tones appropriate to Force Protection Conditions (FPCON), watches, warnings, evacuation routes, and other alerting information to meet DOD, Air Force, AFMC and plant specific warning and notification requirements. The system at Plant 42 shall be supplied by Federal Signal Commander Software to allow for communication with the Federal Signal Commander software currently installed on the main controller at EAFB. This shall allow the Primary Giant Voice Controller (GVC) at Plant 42 to communicate to the main controller at EAFB via IP (military fiber network) allowing for full functionality. The ATMNS shall be a component of and connected to the "Installation Warning System" (IWS) as defined by Air Force Instruction (AFI) 10-2501, Emergency Management (EM) Planning and Operations.

1.3 Roles and Responsibilities

- OL-AF Plant-42/PM will be responsible for project management.
- OL-AF Plant-42/CE will be responsible for systems architecture/engineering.
- OL-AF Plant-42/CE will be responsible for system acceptance and maintenance.
- OL-AF Plant-42/SF will be the System Operator.
- OL-AF Plant-42 CE will provide allied support and identify all CE requirements.
- OL-AF Plant-42/SF will ensure system meets plant FP standards; provide zoning and prioritization for system design.
- 412th CS/SCOTS will ensure system operates within authorized Frequency range.

1.4 Project Working Group

The following are members of the Anti-Terror Mass Notification System Project Working Group:

Members	**Organization**
Project Manager	OL-AF Plant-42/PM
System Engineer	CS/SC/SCXPT
System Owner	OL-AF Plant-42/SF
System Operator	OL-AF Plant-42/SF
Civil Engineering	OL-AF Plant-42/CE
Management	OL-AF Plant 42/CL
Environmental	OL-AF Plant 42/CE

Security Force	OL-AF Plant-42/SF
Spectrum Management	412th CS/SCOTS

1.5 Project Deliverables

The primary deliverable of the Anti-Terrorism Mass Notification System – Giant Voice Project will be the outside plant wide mass notification capability. Additional deliverables include system engineering requirement specification; system design diagram, installed equipment documentation, training and documentation and warranty package are listed.

ITEM NAME	ITEM DESCRIPTION
System Engineering Requirements Specification	To be provided by OL-AF Plant-42 PM
System Design Diagram	To be provided by vendor
Installed Equipment Documentation	To be provided by vendor
Training and documentation	To be provided by vendor
Warranty Package	To be provided by vendor

1.6 Background Information (ATMNS-Giant Voice)

Anti-Terrorism Mass Notification System- Giant Voice will provide outdoor (external) mass notification to all personnel in the immediate vicinity of a building or installed speaker during emergency situations in compliance with the local requirements. The Giant Voice system is typically installed as a wide-area (plant-wide) system to provide siren signal, pre-recorded and live voice messages. It is most useful for providing mass notification for personnel in outdoor areas, expeditionary structures, and temporary buildings. Giant Voice is not usually suitable for internal use in most permanent inhabited buildings, and must not be used in lieu of an individual building mass notification system. OL-AF Plant-42 Anti-Terrorism Mass Notification System is scheduled for implementation in single phase to include 10 locations throughout the plant. See Figure 1 for the projected placement of each GV speaker. The Giant Voice system makes up the external warning system in the overall Anti-Terrorism Mass Notification project. After successful completion of the Giant Voice phase, OL-Plant-42 will implement the Big Voice (internal) warning phase to include Network Alert System (NAS: At-Hoc) and internal public addressing system (IPAS), which will be integrated into the Giant Voice system.

1.7 List of Terms & Acronyms

ADPE	Automatic Data Processing Equipment
AFLCMC	Air Force Life Cycle Management Center
AFTC	Air Force Test Center
AFMC	Air Force Materiel Command
AFI	Air Force Instruction
ATMNS	Anti-Terrorism Mass Notification System

BDOC	Base Defense Operations Center
COMSEC	Communications Security
CPIN	Computer Program Identification Number
C4I	Command, Control, Communications, Computers, and Intelligence
DIACAP	Defense Information Assurance Certification and Accreditation Process
EI	Engineering Installation
EM	Emergency Management
FEMA	Federal Emergency Management Agency
FM	Frequency Management
FPCON	Force Protection Conditions
GIS	Geographic Information System
GUI	Graphical User Interface
GV	Giant Voice
GVC	Giant Voice Controller
GVT	Giant Voice Tower
IPAS	Internal Public Addressing System
IT	Information Technology
IWS	Installation Warning System
LAN	Local Area Network
MNS	Mass Notification System
NAS	Network Alerting System
O&M	Operation & Maintenance
OL-AF	Operating Location – Air Force
RF	Radio Frequency
SERS	System Engineering Requirement Specification
TAS	Telephone Alerting System
UFC	Unified Facilities Criteria

UPS	Uninterruptible Power Supply

2. Project Elements

Element 1: Project Requirements.

Element 2: Key Performance Parameters.

Element 3: Project Schedule.

2.1 Project Requirements

2.1.1 Required Technical Qualifications

2.1.1.1 The contractor shall demonstrate full knowledge and understanding of the specifications and requirements for implementation of a Federal Signal manufactured plant-wide Giant Voice (GV) system by submitting a detailed and comprehensive proposal outlining their methodology, equipment and number of Giant Voice Towers used to satisfy this requirements document.

2.1.1.2 The contractor shall provide references for outdoor warning systems and be able to demonstrate previous experience and past performance with Giant Voice (GV) systems.

2.1.1.3 The contractor shall provide factory-trained personnel to perform system design, installation, testing, training, and maintenance through the receipt of system certification documentation. The contractor shall provide a letter from the siren manufacturer stating their receipt of this training and technical qualifications, or the siren manufacturer themselves shall complete the design, installation, testing, training and maintenance on the system being obtained.

2.1.2 Technical Services Required

2.1.2.1 The contractor shall provide, at a minimum, all equipment, installation, training, on-site performance and system testing, complete documentation (including product assembly drawings, operation manuals and wiring diagrams), in electronic format (Microsoft Word viewable format to view all documents in its entirety), with minimum detail to support the training of operating and maintenance personnel and support activations, configuration management, troubleshooting, preventive maintenance, and corrective maintenance.

2.1.2.2 The contractor shall provide complete system testing to ensure the system is installed exactly as proposed in satisfying this requirements document. Contractor shall provide an acceptance test plan to outline the testing sequence and steps to follow during system acceptance. Testing includes acoustic testing to guarantee clear and intelligible voice with no echo while the voice and tone announcements are assessed through several series of activations. Test plan will also address safety and environmental issues as well as the operational testing of control unit.

2.1.2.3 The contractor shall design, obtain and install a customized Giant Voice system that shall meet DOD, AF and plant specific requirements. The system must be planned out in detail to ensure that plant sound levels are not exceeded as well as providing for adequate coverage of the plant. The plant environmental representative shall review the designs to ensure the decibel levels are within specified plant safety standards. The contractor provided SoundPLAN® acoustic sound model shall describe the decibel levels +/- 3dB of the system when activated. The provided acoustic map shall be submitted as part of the initial contractor proposal, with a final acoustic map provided upon completion of the site survey.

2.1.3 Giant Voice Controller (GVC) Station Requirements

2.1.3.1 The locations of the Giant Voice Controller communications units shall be coordinated with the first responders at OL-AF Plant 42. The primary Voice Controller communications unit should be located at the Base Defense Operations Center (BDOC). The secondary Voice Controller communications unit shall be portable and should be located at a physically separate location such as a security forces building, military police station, secondary fire station, or airfield operations.

The Giant Voice Controller communications units shall activate all outdoor speakers / siren systems at providing voice signals, music, and alarm tones.

Voice Signals: Wide Area Mass Notification System (MNS) shall be capable of providing intelligible live and pre-recorded voice signals.

Music: Wide Area MNS shall be capable of providing music, such as the National Anthem, and other musical signals such as Attention to Colors, Reveille, and Taps.

Tones: Wide Area MNS shall be provided with standard Federal Emergency Management Agency (FEMA) weather warning tones. Military specific warning tones shall be provided as specified by the DoD Installation, and should include tones for conventional attack warning, non-conventional attack warning, all clear, and a system test tone.

2.1.3.2 The primary Giant Voice Controller communications unit shall be powered via 120 VAC and include computer with Federal Signal Commander Software, 22 inch monitor, FSK SS2000+ encoder, microphone, base radio and Uninterruptible Power Supply (UPS) battery backup. The system shall be able to communicate with all GVT RTU's within the Plant 42 system to conduct polling, silent tests, alarm tone activations, pre-recorded messages, live voice broadcasts and music, etc. The status of the Giant Voice System shall include, but not limited to, backup battery, cabinet intrusion, amplifier status, AC Power, RF communication and other maintenance information in the system. The system shall report success, failure, not verified, normal, abnormal, and out of service displays indicating the status of the system at all times.

2.1.3.3 The primary Giant Voice controller software shall be Federal Signal Commander Software and shall include a user friendly interface through both a menu driven and Graphical User Interface (GUI) icons to control and monitor the Giant Voice System and

a plant specific map displaying the plant with the new Federal Signal Ultravoice controlled Giant Voice Tower (GVT) locations. The software shall display, the GVT's when activated while still being able to display the plant map in the background

2.1.3.4 The Giant Voice controller unit's software shall provide easy adjustment of dB levels within the system from 0 dB to -20dB in increments of 1 dB. This adjustment shall be remotely controlled at the GVC(s). The software shall have the ability of providing dB adjustments for all the Giant Voice Towers within the plant or individual Giant Voice Towers to provide the ability to adjust the volume at each location without having to physically visit each location.

2.1.3.5 The primary Giant Voice controller unit and software shall include the necessary equipment and software to have the ability to interface with the AtHoc Inc. system as part of the Network Alerting System (NAS).

2.1.3.6 The secondary Giant Voice controller unit shall be portable and capable of activating the sirens from remote locations. This shall include all tones, messages, music and live voice broadcasts within the Plant 42 System.

2.1.3.7 The primary Giant Voice controller unit shall be capable of storing up to 60 minutes of pre-recorded messages.

2.1.3.8 The GVC units shall provide system zoning capability that allows selective activation of some or all Giant Voice Towers.

2.1.3.9 The GVC units shall have the ability to test Giant Voice Towers individually or simultaneously via quiet test function performing a self-test of the siren's amplifiers and speakers by sounding a 20 kHz tone.

The system at Plant 42 shall be supplied Federal Signal Commander Software to allow for communication with the Federal Signal Commander software currently installed on the main controller at EAFB. This shall allow the Primary GVC at Plant 42 to communicate to the main controller at EAFB via IP (military fiber network) allowing for full functionality.

2.1.3.10 Contractor shall provide wireless activation of all Giant Voice elements, based on frequencies for the system supplied by Edward's frequency manager.

2.1.3.11 In the event of computer failure at Primary GVC Plant 42 controller, the GVC FSK Encoder shall act as a standalone unit to activate all sirens or deliver messages at Plant 42.

2.1.4 Giant Voice Tower (GVT) Requirements

2.1.4.1 The GVT siren equipment shall be Federal Signal Modulator Omni-Directional (non-rotating) electronic siren certified to **UL 464**.

2.1.4.2 The GVT outdoor siren electronic cabinet shall be Federal Signal UltraVoice UVTDU or UVTDH and made of two (2) 316ss stainless steel cabinets connected via sealed conduit. The upper control cabinet will contain siren electronics, radio, etc. and shall be Nema 4x. The lower battery cabinet shall contain battery charger along with four (4) 105 aH Gel batteries and be Type 4 vented.

The communication shall be through RF connectivity with an Omni antenna and LMR400 cable. In addition, the GVT will have 240 Watt solar panels installed and provide up to 72 hours of battery power for all support equipment in the event the primary electrical source is lost.

The GVT indoor siren electronic cabinet shall be Federal Signal UltraVoice UVICU or UVICH and made of painted steel cabinet. Control cabinet will contain siren electronics, radio, etc. and shall be Nema 1. The cabinet shall contain battery charger along with two (2) 45aH sealed AGM batteries.

The communication shall be through RF connectivity with an Omni antenna and LMR400 cable. In addition, the GVT will provide up to 72 hours of battery power for all support equipment in the event the primary electrical source is lost.

2.1.4.3 The GVT siren shall provide seven (7) standard tones, and shall have the capability to provide any additional tones that OL-AF Plant-42 deems necessary via internal GVT message chip.

2.1.4.4 The system shall provide stored prerecorded messages at the GVT to support the digital recordings of all music, messages and tones identified by Edwards AFB-Command Post Primary GVC.

2.1.4.5 The GVT shall provide status messages to the GVC. The GVT will provide status change indications such as door open (intrusion), ac power, charger, amplifier, and battery voltage low. These status messages shall be reported immediately when the siren condition occurs.

2.1.4.6 Locks shall be provided by installation contractor for each GVT siren using one common key for all locations. The OL-AF Plant-42 PM shall identify exact type (e.g. combination or key).

2.1.4.7 The mounting poles for the Giant Voice Towers shall be 50 foot direct burial steel poles with internal conduit raceways. The GVT shall meet all plant requirements addressing wind resistance, height and earthquake. All final designs shall require CE and Environmental concurrence prior to installation.

2.1.4.8 Contractor is responsible for determining the correct quantity of GVT's and speaker array configurations to guarantee clear and intelligible voice.

2.1.4.9 Clear and intelligible voice is defined as the ability to hear and clearly understand all activations with no echo or delay, or perception of an echo or delay, in the sound traveling around the plant geographical area the contractor designs.

2.1.4.10 The GVT's shall not produce unsafe or environmentally violating decibel levels when the system is activating nor should it violate or produce excessive or obtrusive noise.

2.1.4.11 Each GVT shall be supplied with Federal Signal FB2PST-I 24 VDC amber strobe light. Strobe light shall function and remain on for as long as siren function is active.

2.1.4.12 Each GVT shall have a steady burn LED/Incandescent obstruction light with photo cell for night hour operation. Obstruction light shall be manufactured with infrared LED's or IR lenses to allow visibility when night vision is in use.

2.1.5 Site Survey

2.1.5.1 The contractor shall conduct a site survey to identify pole locations through a detailed assessment of existing plant conditions to include, but not limited to the following: determine correct radio frequency(s), assess the decibel levels and ambient noise, and evaluate existing and planned facilities and other structures that impact the acoustics. Contractor shall also take into account local codes when designing the system. Final pole locations must be reviewed by CE and Environmental, and other organizations effected by the construction of system towers.

2.1.5.2 The contractor shall provide a complete package including: training, operations, maintenance and quality control/assurance, drawings, plant map with lobes of acoustic coverage shown, face equipment drawings, a description of the installation with digital photos, list of materials, scope of work, specifications of each pole to include height, weight and location, solar power requirements, detailed schematics, speaker array configurations, electronics configurations and frequency information.

2.1.5.3 Contractor shall provide a comprehensive overview presentation after the site survey. The presentation shall describe the exact functionality of the proposed system to include an actual "hands-on" demonstration of the equipment, software interface, activations, prerecorded messages, tones, alerts and electronic digital message boards and amplifiers once the system is installed and fully operational. A conference room will be provided for this presentation, but the contractor is responsible for providing all other media to give this comprehensive explanation of the new system to CE, Information Technology (IT) section, Airfield Operations, BDOC, Security Forces and any other plant personnel in attendance.

2.1.5.4 Zones will be complete and useable. Implementation will be based on funding, and will be prioritized based on approval from AF-OL Plant -42 Director.

2.1.6 Other Requirements

2.1.6.1 All work areas on the installation shall be completely restored to its original condition and shall have new seed/sod, asphalt and paint as required before final system acceptance. This includes both new areas touched, and existing areas modified to support the Giant Voice installation and decommissioning efforts at the plant. All work shall have all miscellaneous items such as wire clippings, tape, lose wires, trash, paper, etc…

completely removed and areas cleaned and restored to a neat and orderly fashion with all garbage removed on a daily basis.

2.1.6.2 Contractor shall provide a two (2) years parts and labor warranty from date of delivery, return to factory for service. Contractor shall provide on-site warranty service during the first 60 days after completion of the installation.

2.1.6.3 Contractor shall meet all local plant purchasing requirements including: insurance, performance bonds, locality wages, etc.

2.1.6.4 Contractor shall follow schedule managed by OL-AF Plant-42 Project Manager.

2.2 Key Performance Parameters

TECHNICAL	**THRESHOLD**	**OBJECTIVE**	**STATUS**
Technical Qualification	In compliance	In compliance	To be provided by vendor
GV Control Station	Software driven –GIS Mapping display with push of button activation: Graphical User Interface	Software driven –GIS Mapping display with push of button activation: Graphical User Interface	To be provided by vendor
Control Unit	Able to activate as a standalone unit with no computer interaction	Able to activate as a standalone unit with no computer interaction	To be provided by vendor
Giant Voice Tower	In according with site survey and System Design	In according with site survey and System Design	To be provided by vendor
Solar Panel	In according with site survey and System Design	In according with site survey and System Design	To be provided by vendor
Wireless RF	UHF, VHF or Trunking	Coordination and Approved in according with Edward's FM	To be provided by vendor
System Design with Zonings	Diagram covered plant wide zonings and locations	Zonings and locations reviewed and approval by Director, CE and Environmental	To be provided by vendor
Training Package and Documentation	User/Operator Training and Maintenance Activity Training with documentations	User/Operator Training and Maintenance Activity Training with documentations	To be provided by vendor
Test & System Acceptance	Acceptance Test Plan	Acceptance Test Plan	To be provided by vendor

Warranty and Maintenance Package	5 years	5 years	To be provided by vendor

2.3 Project Schedule
TBD

2.4 Project Cost
TBD

3. Project Logistics Planning

Element 1: Equipment List.

Element 2: Technical Design Diagram.

Element 3: Training.

Element 4: Configuration Management.

Element 5: Property Transfer

Element 6: Acceptance Test

Element 7: Operational Certification

Element 8: Maintenance Planning

Element 9: Safety and Security

3.1 Equipment List

TBD with System Design

3.2 Technical Design Diagram

ATMNS System Design shall be provided/submitted by vendor

3.3 Training

On-site training shall include two different types of training, one for the operator/user of the system (Airfield Operations and Emergency Personnel), and one for the maintenance activity of the system (OL-AF Plant-42 IT). During the initial installation of the project, within 30 days before final system acceptance, the contractor shall conduct training sessions for each set (operator/user training and maintenance training).

3.4 Configuration Management

Configuration Management will be in according with 95th Manage Enterprise Configuration Handbook Dated 17 Oct, 2006.

3.5 Property Transfer

For real property items there will be a DD 1354 filled out and turned in through OL-AF Plant-42 CE to account for Air Force real property.

3.6 Acceptance Test

OL-AF Plant-42 IT/CE Chief witness the test results, as built drawings, equipment lists to include manufacturer, model, serial number and equipment layout drawings shall be delivered to the OL-AF Plant-42 PM and respected plant parties upon completion of the project and during the project acceptance.

3.7 Operational Certification

System provided by the vendor shall be Defense Information Assurance Certification and Accreditation Process (DIACAP) certification or equivalent.

3.8 Maintenance Planning

Maintenance/Service Contract for the ATMNS Giant Voice System will be for a period no less than five years.

3.9 Safety and Security

ATMNS-Giant Voice System must be secure within the AFFTC security standards.

3.9.1 Physical Security

ATMNS Giant Voice system must be physically protected to meet the needs, policies, and standards of AFMC, AFTC and AFLCMC.

3.9.2 Information Security

ATMNS Giant Voice system must be protected in accordance with Communications Security (COMSEC) and any additional needs, policies, and standards of AFMC, AFFTC and AFLCMC.

APPENDIX A

References

1.0. Department of Defense Documents – Unified Facilities Criteria (UFC)

- UFC 4-021-01 Design and O&M: Mass Notification Systems
- UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
- UFC 3-260-01 Airfield and Heliport Planning and Design
- UFC 3-535-01 Visual Air Navigation Facilities

1.1. Air Force Documents

- AFI 10-2501 AF Emergency Management (EM) Program Planning and Operation
- AFI 33-118, Radio Frequency Spectrum Management
- AFMAN 33-120, Radio Frequency (RF) Spectrum Management
- AFMCI 33-104, Engineering Installation (EI) Procedures
- AFCSM 556 thru 579 series, Vol II, Core Automated Maintenance System
- AFI 10-901, Lead Operating Command -- Command, Control, Communications, Computers, and Intelligence (C4I) Systems Management
- AFI 21-109, Communications Security (COMSEC) Equipment Maintenance and Maintenance Training
- AFI 21-116, Maintenance Management of Communications Electronics
- AFI 21-404, Developing and Maintaining Communications and Computer Systems Installations Records
- AFI 21-401, Information Security Management Program
- AFI 33-101, Command, Control, Communications, and Computer Systems Management Guidance and Responsibilities
- AFI 33-103, Requirements Development and Processing
- AFI 33-104, Base-Level Planning and Implementation
- AFI 33-111, Telephone Systems Management
- AFI 33-112, Automatic Data Processing Equipment (ADPE) Management
- AFI 33-203, The Air Force Emission Security Program
- AFI 33-211, Communications Security (COMSEC) User Requirements
- AFM 23-110, Vol II, USAF Supply Manual
- AFMQCC 100-1, Equipment, General -- Records, Physical, and Operational Condition
- AFMQCC 200-1, C-E Grounding Systems
- AFI 91-50, AF Occupational Safety and Health Standard
- AFI 32-1065, Grounding Systems
- T.O. 00-25-234, General Shop Practice Requirements for the Repair, Maintenance, and Test of Electrical Equipment
- T.O. 31-1-175, General Installation Practices
- T.O. 00-35D-2, Electronic Set Inventory Checklist
- T.O. 00-5-17, USAF Computer Program Identification Number (CPIN) System

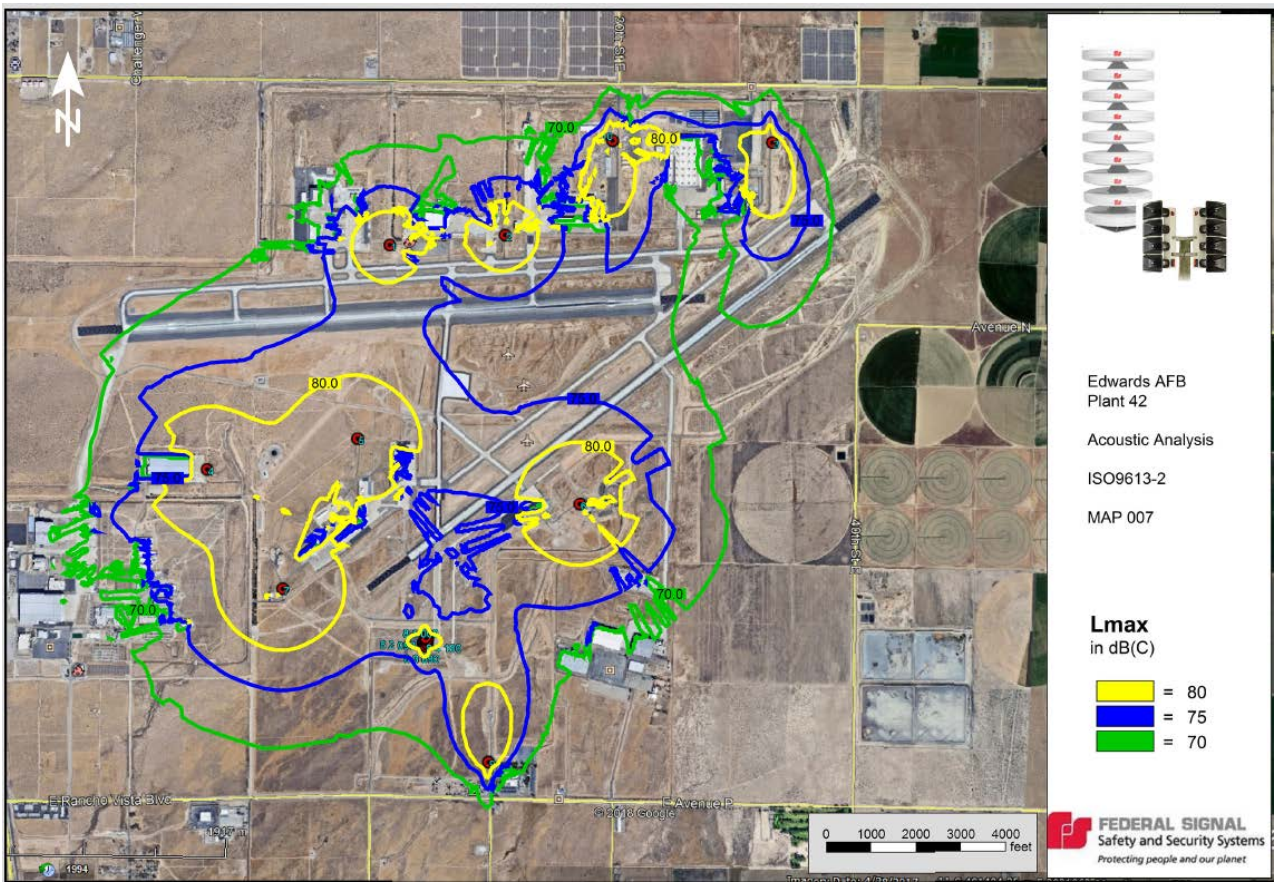
- T.O. 00-5-2, Technical Order Distribution System
- T.O. 31-10-28, Erection of Steel Towers

1.2. Other Documents

- 95th CG Manage Enterprise Configuration Handbook, Oct 17, 2006

APPENDIX B

OL-AF Plant 42 Sound Map



APPENDIX C

OL-AF Plant 42 Pole Locations

Siren	LONGITUDE	LATITUDE	Height (ft.)	Type
1	-118.093342	34.635974	45	MOD2008b
2	-118.084801	34.636689	45	MOD2008b
3	-118.065101	34.642557	45	DSA6 @ 180° DSA4 @ 270°
4	-118.106624	34.622176	45	MOD4016b
5	-118.09551	34.624161	45	MOD4016b
6	-118.078992	34.620345	45	MOD4016b
7	-118.100884	34.61497093	45	MOD4016b
8 1	-118.090277	34.612081	15	AM302 @ 000°
8 2	-118.090134	34.611947	15	AM302 @ 090°
8 3	-118.090142	34.611722	15	AM302 @ 090°
8 4	-118.090282	34.611576	15	AM302 @ 180°
8 5	-118.090425	34.611719	15	AM302 @ 270°
8 6	-118.090428	34.611936	15	AM302 @ 270°
9	-118.085537	34.604578	45	DSA6 @ 000°
10	-118.07666	34.641609	45	DSA6 @ 180° DSA4 @ 90°