

To: Stanley Siejka - Northrop Grumman, Calverton
Phone (516) 953-7097, FAX (516) 953-3698

From: Tony Tavormina - Data System and Services Division
Phone (703) 866-7505, FAX (516) 866-7536

Date: January 30, 1995

Subject: E-2T TTGS (Tau-Ten Ground System) RF Equipment Information

The TTGS uses both UHF and HF transmitter/receiver equipment to communicate with the E-2T aircraft. The following represents some of the pertinent specifications of these equipments:

UHF

Rockwell Collins GRC-171(V)
Operating Frequency - 225-400 MHz
Max. Power - 50 watts AM, 25 Watts TADIL

Antennas - Antenna Products model DC-2250 'Disc Cone', 18" in. width, 15.4 in. height, gain - 1.5 dB over isotropic. Present plan is to mount five (5) antennas on an triangular aluminum mast approximately 75' high on a west facing, two story wall of Plant 14.

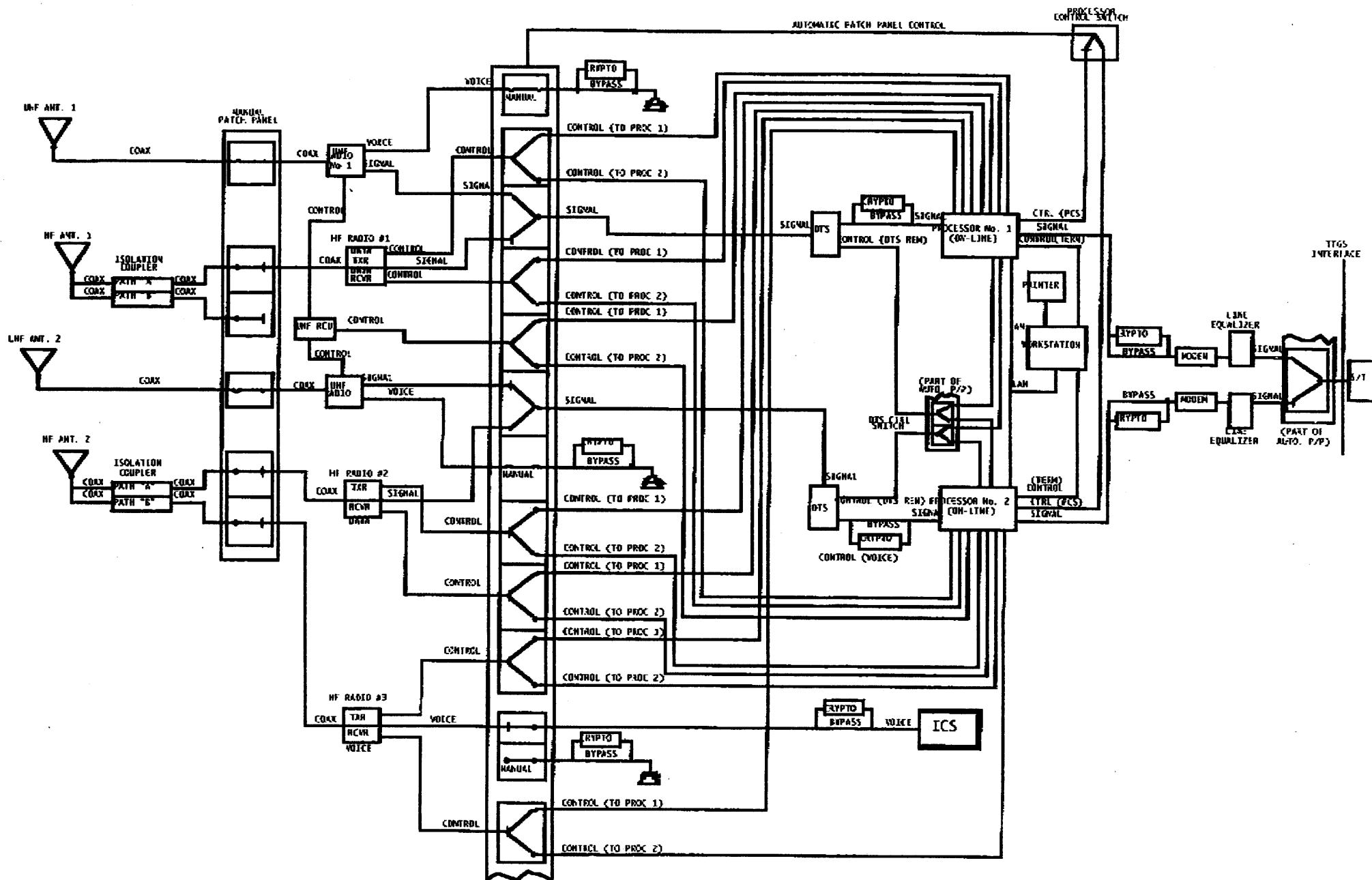
HF

Mackay Communications
Exciter MSR-6700A
Receiver MSR-5050A
Linear Power Amplifier MSR-1020A
Power Supply MSR-6212A

Operating Frequency - 2-30 MHz
Max. Power - 1000 Watts (Note - Output power of HF equipment, while in use for testing and customer acceptance in Plant 14, will be attenuated down to only that level necessary to successfully communicate with the E-2T aircraft during training flights off the south-east coast of Long Island. Historical data from Plant 14 shows this level to be approximately 300 Watts.)

Antenna - Andrew Canada, 3002-HE 'Spira-cone'. Approximately 60' in Diameter, 35' in height. Gain - 7 dB.

A basic block diagram of the TTGS system, its communication links and equipment strings is attached.



NORTHROP GRUMMAN CORPORATION

MEMORANDUM

27 January 1995
OSH/IOM 95-07


From: W. Laag, C.S.P.
Occupational Safety & Health

D16-111
(516) 575-4472 fax 9549

To: S. Siejka
Radio Communications

B23-007
(516) 953-7097 fax 3698

SUBJECT: Transmitter Environmental Impact Statements

Re: FCC License Applications for TAU TEN Transmitters (Contract # EA-2190-F):

Attachment 1) : E2T TTGS SPIRA-CONE HF ANTENNA

Attachment 2) : E2T TTGS DISK CONE HF/UHF ANTENNA

Attachment 3) : SITE COORDINATES

Attached are Environmental Impact Statements for both subject transmission systems to be installed in the proximity of building 014. They have been prepared as a requisite for FCC license applications.

The SPIRA-CONE statement is based upon calculated safe distances. Actual field strength measurements will be taken to validate the calculated values once the transmitter is operational to ensure personnel safety and compliance with FCC regulations.

The DISK-CONE statement is based upon previous survey data from similar existing communication systems located at building 014. Field strength measurements will also be taken to verify personnel safety and compliance with FCC regulations.

Direct any questions to the writer.

WEL : wl
Attachments

cc: J. Bollinger A. Gibson G. J. Kash A. Tavormina

ENVIRONMENTAL IMPACT STATEMENT

E-2T TTGS SPIRA-CONE Model 3002 HF ANTENNA

This spiral cone shaped antenna is to be erected in an unoccupied antenna range located north of building 014 in the Bethpage, N.Y. complex. The antenna appears as an inverted umbrella utilizing a 35 foot tall center mast. The lowest antenna element is 13 feet above grade and the diameter is 60 feet at the top of the 35 foot mast. Guy wires attached to four anchor points at grade provide stability (see Figure 1, attached). Input power will be 1 KW maximum.

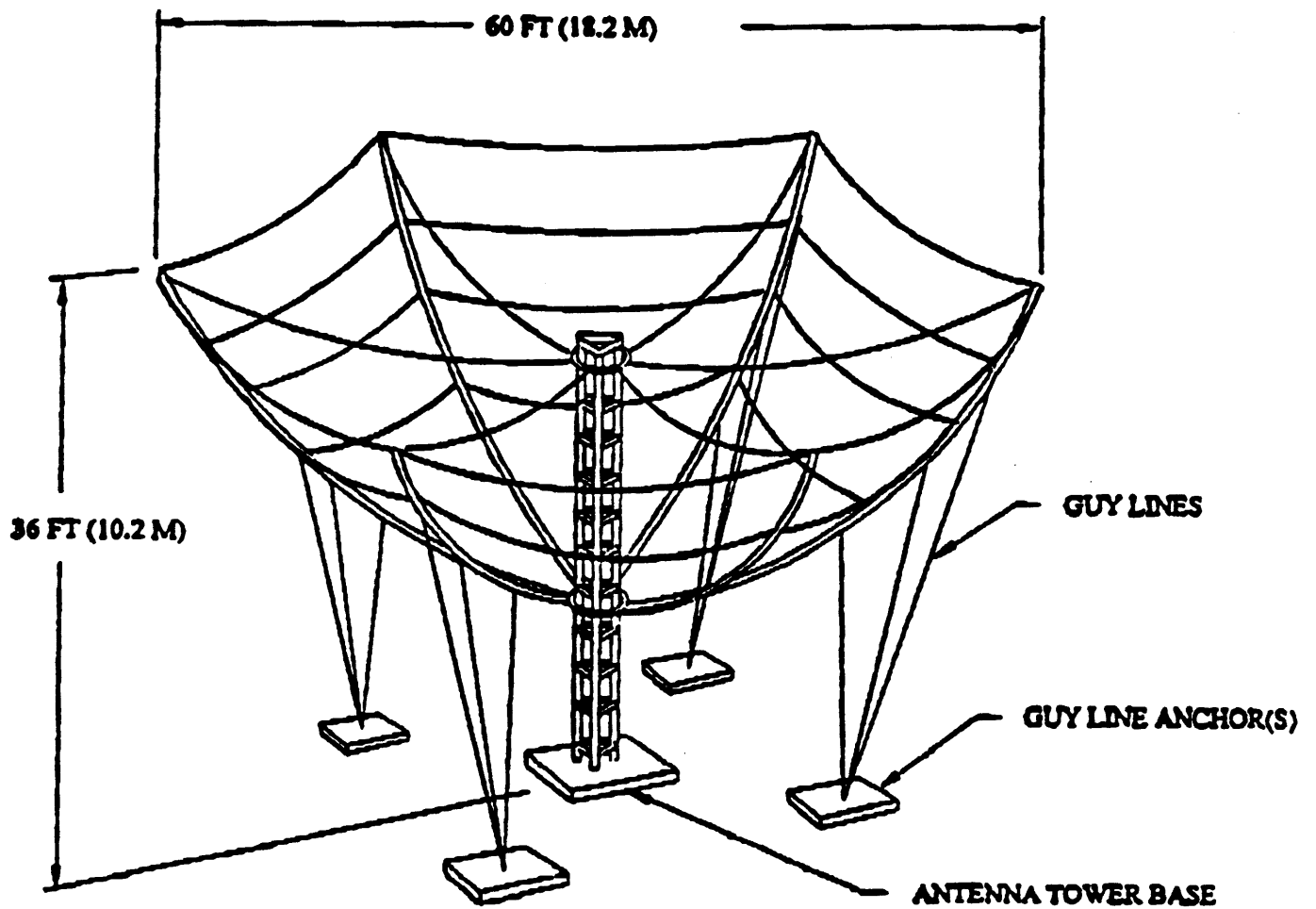
The antenna manufacturer has provided radiation propagation curves which indicate that at distances greater than 10 meters from the center mast, radiation levels will be below the permissible personnel exposure levels published in the ANSI C95.1(1991) standard. Personnel access will be restricted by a physical barrier to preclude human exposure levels above the permissible value. Both the electric and magnetic field strengths will be measured to validate the calculated data. Therefore this transmission system will be operated in compliance with FCC OFFICE of TECHNOLOGY BULLETIN No. 65, dated October, 1985.

Prepared by: Werner E. Laag

Werner E. Laag, C.S.P.
Occupational Safety
& Health
Radiation Safety Officer
January, 1995

FIGURE 1

OSH/IOM 95-07



TTGS HF Antenna

ENVIRONMENTAL IMPACT STATEMENT

E-2T TTGS DISK CONE Model DC-2250 HF/UHF ANTENNAS

These 5 disk cone antennas are to be mounted on a 75 foot mast installed on the roof of building 014. No more than two will be transmitting simultaneously. The maximum input power will be 500 watts each. Existing similar HF/UHF antennas have been surveyed and found to emit less than 0.05 milliwatts per square centimeter in all accessible areas on the building 014 roof. This is below the permissible exposure levels published in ANSI C95.1, 1991. Field strength measurements will be taken to verify the validity of the previous data to ensure compliance with FCC OFFICE of TECHNOLOGY BULLETIN No. 65, dated October, 1985.

Prepared by: Werner E. Laag

Werner E. Laag, C.S.P.
Occupational Safety
& Health
Radiation Safety Officer
January, 1995

GRUMMAN AEROSPACE & ELECTRONICS

Administrative & Support Services

Facilities Engineering - Interoffice Memorandum

January 27, 1995

From: 
Dale S. Kant
Facilities Engineering

To: *Werner Laag*

Subject: **TAU TEN ANTENNA**

As requested, the following are the grid coordinates and grade elevations for the proposed location of the Tau Ten Antenna. Please note that the grid coordinate is based on the New York State Plane Coordinate System, Long Island Zone.

Grid Coordinate: *N-195 000*
E-2 139 625

Grade Elevation: *130.00'*

Please call me at 5-6171 should you have any further questions regarding this.

cc: *H. Rotzman*