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**Science** Applications International Corporation

An Employee-Owned Company

Federal Communications Commission Office of Secretary

March 10, 1998

Magalie Salas, Secretary Federal Communications Commission 1919 M Street, N.W. Room 222 Washington, D.C. 20554

> Re: Science Applications International Corporation Minor Amendment to Pending Application for Experimental Radio Station Authorization

Dear Ms. Salas:

Science Applications International Corporation ("SAIC") hereby submits the attached minor amendment to its pending application for an experimental radio station authorization. This amendment responds to the Commission's request for additional information regarding the operations proposed in the application. SAIC respectfully requests that the Commission associate this amendment with the underlying application.

Respectfully submitted,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

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<u>rnule</u> ank <u>Secretary</u> & Serin Consel

Date: March <u><u></u>, 1998</u>

1710 Goodridge Drive, P.O. Box 1303, McLean, Virginia 22102 (703) 821-4300

Other SAIC Offices: Albuquerque, Boston, Colorado Springs, Dayton, Huntsville, Las Vegas, Los Angeles, Oak Ridge, Orlando, Palo Alto, San Diego, Seattle, and Tucson

ORIGINAL

## SUPPLEMENTAL ENGINEERING STATEMENT ON BEHALF OF SCIENCE APPLICATIONS INTERNATIONAL CORPORATION IN SUPPORT OF APPLICATION FOR EXPERIMENTAL LICENSE

This engineering statement, prepared on behalf of Science Applications International Corporation ("SAIC") supplements the statement of September 27, 1997. The purpose of the supplement is to supply additional engineering information requested by Commission staff relative to the SAIC application for an experimental license to permit testing of the Vehicle and Electronics Disruption System ("VEDS").

## **Test Location**

SAIC now proposes to conduct both Phase I and Phase II testing at the Los Alamos National Laboratory, Los Alamos, New Mexico. Proposed location of the test transmitter is identified by the following geographic coordinates (NAD 27) determined by reference to the Frijoles, New Mexico, 7-1/2 minute US Geological Survey Topographic Quadrangle.

> 35° 49' 27" North Latitude 106° 17' 51" West Longitude

## **Emission, Radiated Power and Frequency**

The emission designator for the pulse transmissions used by VEDS is PON.

Radiated power for the system was determined by integrating the power density over the portion of a sphere bounded by the E-plane and H-plane half power angles. An upper bound was obtained by assuming the peak (beam center) power density for the entire area.

## Jules Cohen, P.E.

Consulting Engineer

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The full E-plane half-power angle is calculated to be 0.14137 radians and the full H-plane half-power angle is calculated to be 0.20944 radians. Radiated energy calculated by ithe integration process for the area (217.4 square meters), and taking into account the impedance of free space (376.7 ohms), yields a figure of 0.15 joules. Since measurements of field strengths are made customarily with 100 millisecond integration time, the time averaged radiated power will be 1.5 watts as measured.

Determination of the radiated power spectral distribution must take into account the spectrum analyzer bandpass characteristics as well as measurement integration time. Based on the assumption of a perfect one-megahertz bandpass filter and a sampling period of 100 milliseconds, the Fourier analysis of radiated power versus frequency yields the results depicted in the graph appended hereto as Figure 1.

The undersigned wishes to acknowledge the assistance of Mr. Richard W. Sutton of SAIC who provided the data calculations incorporated herein.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 23, 1998.

Jule Cohen

Jules Cohen, P.E.



Frequency, Hz

RADIATED POWER MEASURED IN ONE-MEGAHERTZ PASS BAND WITH 100 MILLISECOND INTEGRATION TIME