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Summary of Electromagnetic Tests for High Power Radio Frequency (HPRF) Phase 2 Study (U)

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Abstract (U)

In support of the High Power Radio Frequency (HPRF) Phase 2 Study, electromagnetic tests were performed at Sandia National Laboratories and Defense Nuclear Agency's electromagnetic simulators on electronic equipment.

Classified by M. E. Morris, Manager, Electromagnetic Analysis and Test Department 2753, October 11, 1994.

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Lt.Col. Roger Colvin FCDNA	Test asset acquisition, test planning and test conduct
Bob Ketelsen SAIC	Test instrumentation and test asset repair
Bill Derr Derr Enterprises	Test instrumentation and test asset repair
Bill Tedeschi SNL	Test program planning
John Stake SNL	Test conduct and data processing
Parris Holmes SNL	Test conduct and test instrumentation

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Executive Summary (U)

[redacted] As one of the participating organizations in the HPRF Phase 2 Study, Sandia National Laboratories conducted electromagnetic tests on foreign test assets.

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DOE & DTRA

[redacted] As a result of the testing performed, the following general conclusions can be drawn.

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DOE & DTRA

Introduction (U)

[redacted] The HPRF Phase 2 weapon study is a joint DoD (Air Force) and DOE effort that has been active to date for 24 months of a total 30-month effort. Participants include Defense Nuclear Agency (DNA), DOE and its design laboratories, and several U.S. Air Force agencies.

b(3) B3 DOE & DTRA

b(3) DTRA

DOE & DTRA

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In addition, voltage and current measurements during conduct of the tests were made to establish the stress levels at which a failure occurred. These are to be provided to the MAWG so that Foreign Asset Assessment Team (FAAT) results can be verified.

(U) In the remainder of this summary report, a brief description of each test object is given. Each test facility and the environment it provided is briefly described. Test configurations, test measurements, and test results are discussed.

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b(1) B1 DOE & DTRA

b(1) DOE & DTRA

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B1 DOE & DTRA

Test Objectives (U)

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B3 DOE & DTRA

In addition to determining the failure levels in volts/meter, stress level data was measured for two of the test units.

Test Facility (U)

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B3 DOE & DTRA

Test Configurations and Measurements (U)

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b(3) DTRA

B3 DOE

b(3)

DOE &
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Conclusions (U)

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Test Objectives (U)

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Test Facility (U)

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Test Configurations and Measurements (U)

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DOE & DTRA

DOE & DTRA

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Test Results (U)

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DOE & DTRA

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Test Objectives (U)

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DOE & DTRA

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Test Facility (U)

DOE & DTRA

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Test Configurations and Measurements (U)

DOE & DTRA

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DOE & DTRA

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b(1)

Table 4. PU-12M Test Configurations (U)

DOE & DTRA

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DOE & DTRA

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DOE & DTRA

DOE & DTRA

B3

b(3)

The radios were checked by sending RF transmissions to the antennas and the telephone line was checked with a portable telephone.

DTRA b(1)

Test Results (U)

DOE & DTRA

b(3)

B3 DOE & DTRA

DTRA

B3 DOE & DTRA

DOE & DTRA

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b(3)

Conclusions (U)

B 1

b(3)

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