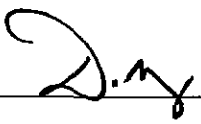
Red Hill Administrative Order on Consent, Attachment A Scope of Work Deliverable

Section: 5.1 Outline of Corrosion and Metal Fatigue Practices Report

In accordance with the Red Hill Administrative Order on Consent, paragraph 9, DOCUMENT CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fines and imprisonment for knowing violation.

Signature: 

CAPT Dean Tufts, CEC, USN
Regional Engineer, Navy Region Hawaii

Date: 1/25/16

OUTLINE OF
CORROSION AND METAL FATIGUE PRACTICES REPORT
13 January 2016

SECTION 1 INTRODUCTION

1-1 BACKGROUND

Summarize the background of this Red Hill effort leading to the preparation of this report.

1-2 PURPOSE AND SCOPE

Describe the purpose of this Corrosion and Metal Fatigue Practices report, and the content that will be presented in the report based on the requirements of the Administrative Order on Consent (AOC).

1-3 TANK CONSTRUCTION FEATURES IMPACTING CORROSION

Provide a brief description of the tank construction features resulting in current corrosion prevention and control considerations and requirements.

SECTION 2 CURRENT CORROSION ASSESSMENT PRACTICES

2-1 INTRODUCTION

Provide a brief description of the content included in this section of the report.

2-2 TANK CONSTRUCTION FEATURES – EFFECTS ON CORROSION ASSESSMENT PRACTICES

Provide content describing various corrosion prevention and control practices considered and limitations based upon construction features of the tanks.

2-2.1 Cathodic Protection

2-2.1.1 Applicable Standards

Describe applicable Department of Defense (DoD) and Industry standards regarding cathodic protection of storage tanks.

2-2.1.2 Technical Discussion

Provide technical content describing cathodic protection technology and the impracticality of applying cathodic protection to the Red Hill storage tanks.

2-2.1.3 Historical Third Party Practical Assessments

Provide content describing historical third party conceptual and technical assessments regarding cathodic protection application.

2-2.2 Internal Protective Coating

2-2.2.1 Applicable Standards

Describe applicable DoD and Industry standards regarding application of protective coatings for corrosion control for the Red Hill fuel storage tanks.

2-2.2.2 Technical Discussion

Provide technical content describing protective coatings technology and current practices of applying protective coatings to the Red Hill storage tanks.

2-2.2.3 Current Assessment Practices

Provide content describing assessment practices of the applied interior protective coatings during periodic tank integrity assessments.

2-2.3 Tank Integrity Assessment

2-2.3.1 Applicable Standards

Describe applicable DoD and Industry standards that impact current integrity assessment practices for the Red Hill fuel storage tanks.

2-2.3.2 Frequency and Schedule

Briefly describe the current frequency and schedule of integrity assessments for the Red Hill fuel storage tanks. (More detailed discussions will be presented in the Tank Inspection, Repair, and Maintenance (TIRM) Procedures Report to be prepared in accordance with AOC-Statement of Work (SOW) Section 2).

2-2.3.3 Non-destructive Testing of Tank Shell Plates

Briefly describe the integrity assessment procedures for the Red Hill fuel storage tanks. (More detailed discussions will be presented in the TIRM Procedures Report to be prepared in accordance with AOC-SOW Section 2).

2-2.3.4 Corrosion and Integrity Analysis/Identification of Locations for Further Assessment

Briefly describe visual and non-destructive testing procedures and how they aid in corrosion assessment. (More detailed discussions will be presented in the TIRM Procedures Report to be prepared in accordance with AOC-SOW Section 2).

2-2.3.5 Identification of Repair Locations

Briefly describe how visual and non-destructive testing and assessment procedures help determine anomalies that will require repair including a discussion on the plate thickness that is considered acceptable and what amount of corrosion thinning triggers a need for repair. (More detailed discussions will be presented in the TIRM Procedures Report to be prepared in accordance with AOC-SOW Section 2).

SECTION 3 METAL FATIGUE DESIGN CONSIDERATIONS

3-1 INTRODUCTION

Provide a brief description of the content included in this section of the report.

3-2 TANK DESIGN FEATURES

3-2.1 Applicable Standards

Describe applicable DoD and Industry standards that impact current design practices for fuel storage tanks and considerations for metal fatigue.

3-2.2 Tank Construction Features/Operational Procedures Impacting Metal Fatigue

Provide general technical discussion of metal fatigue and how design and construction features specific to the Red Hill storage tanks may impact metal fatigue. Discuss operational requirements of the storage tanks and how they may impact metal fatigue.

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SECTION 4 HISTORICAL RECORDS

4-1 GENERAL

Provide a brief description of the content included in this section of the report.

4-2 HISTORICAL RECORDS PRACTICES

Subsections below will identify recordkeeping practices and procedures at each of the different known entities responsible for keeping records. Describe available data such as as-built tank drawings, historical corrosion assessment reports, and other site-specific data that constitute Navy recordkeeping practices for the Red Hill fuel storage tanks. The section will also briefly describe the current Navy practices on analyses conducted using the historical records, specifically:

a. A description of how inspection and repair data are catalogued/maintained for historical record and lessons learned for improvement of procedures and processes,

b. How corrosion rates are computed from the scan data, and

c. Historical data, if any, that may suggest concerns of metal fatigue of the tank steel liners.

4-2.1 Fleet Logistics Center Pearl Harbor

4-2.2 Naval Facilities Engineering Command (Expeditionary Warfare Center/ Pacific/ Hawaii)

4-2.3 Other Known Repositories

SECTION 5 SUMMARY

Provide summaries of each of the previous sections.

5-1 GENERAL

5-2 CURRENT CORROSION ASSESSMENT PRACTICES

5-3 METAL FATIGUE DESIGN CONSIDERATIONS

5-4 HISTORICAL RECORDS

APPENDIX A References

APPENDIX B (As Needed)

APPENDIX C (As Needed)

Additional Appendices as needed