Chief of Naval Operations Environmental Awards (FY15)
Fleet Readiness Center Southeast (FRCSE)

NARRATIVE

INTRODUCTION

1. **Mission:** FRCSE is one of eight Fleet Readiness Centers in the Naval Air Systems Command (NAVAIR) tasked with providing general aviation maintenance and repair services, and one of only three that provide in-depth modifications and overhaul of aircraft, engines, and their components. FRCSE is a full-spectrum maintenance operation with all the key capabilities required to maintain high-performance aircraft, including comprehensive in-service engineering and logistics services and support. Maintenance is performed on a variety of aircraft, including the P-3 Orion Antisubmarine Patrol Aircraft, F/A-18 Hornet Carrier-based Strike Fighter/Attack Aircraft, T-34 and T-44 Trainer Aircraft, EA-6B Prowler Joint Carrier-based Electronic Warfare Aircraft, and SH-60 Seahawk Utility/Assault Helicopter. In addition, FRCSE performs complete overhaul on Navy, Air Force, Army, and Marine Corps aviation engines and components.

2. **Environmental, Geographic, and Community Setting**: FRCSE is the largest tenant command on NAS Jacksonville and is the largest industrial employer in Northeast Florida and Southeast Georgia. FRCSE has more than 3,600 employees representing more than 100 trades, occupations, and professions. FRCSE covers 127 acres and occupies 63 buildings with more than 2.5 million square feet of industrial, office, and warehouse space. FRCSE lies within the City of Jacksonville and borders the St. Johns River, which is a designated American Heritage River. FRCSE is under the regulatory authority of the Region four offices of the Environmental Protection Agency, as well as the Northeast District offices of the FDEP.

BACKGROUND

1. **Program Management:**

FRCSE maintained an externally certified ISO 14001:2004 Environmental Management System (EMS) program. The EMS program and all FRCSE environmental programs were planned, executed, and driven according to the FRCSE Environmental Policy Statement, which focused on a commitment to environmental compliance, sustainability and pollution prevention, and continuous improvement. FRCSE was also committed to mission sustainment at the least cost while meeting the goals of the Department of Defense (DoD) Strategic Sustainability Performance Plan in support of EO 13423, EO 13514, and the most recent EO 13693. FRCSE has integrated these goals as a priority of its EMS program. The FRCSE Industrial Environmental Division is managed by an environmental director with a staff of 19 professional and technical personnel who are responsible for environmental compliance, environmental operations, and environmental quality. In order to provide high quality

services and continual improvement, the environmental team coordinates closely with internal stakeholders from other key areas of FRCSE, including production, safety, and engineering and logistics personnel. External stakeholders are also a vital part of the puzzle, and include input from the NAS Jacksonville Environmental Office, the City of Jacksonville Environmental Resource Department, the Florida Department of Environmental Protection, and the business community of Northeast Florida.

The EMS program is supported by a working-level EMS and Pollution Prevention (P2) team, which comprises representatives from the FRCSE environmental office, engineering, integrated product teams, and various support organizations. The EMS/P2 team is chaired by the EMS/P2 manager. EMS documentation was maintained on the FRCSE environmental website to ensure all employees, contractor

workers, and military personnel are aware of environmental policy and elements of the EMS program. Leadership involvement is key to FRCSE Environmental Program success. The environmental team briefs the Executive Officer monthly on all aspects of the environmental program, and often includes plant walk-arounds to review actual plant conditions and to recognize environmental and production employees for their hard work and commitment to environmental goals. Internal and external compliance audits, as well as EMS management reviews are managed as opportunities to improve the environmental program. To meet the ISO standard, EMS management reviews are conducted annually and include a review of EMS program performance in terms of mission benefits and cost savings.

2. **Military and Partnership Awards/Acknowledgements:**

2015 FCMA Environmental Protection Award (Two consecutive years);
2014 Chief of Naval Operations (CNO) Environmental Quality Award - Installation;
2014 FCMA Environmental Protection Award;
2013 Secretary of the Navy (SECNAV) Energy and Water Management Award, Blue Level of Achievement;
2013 Secretary of Defense Performance Based Logistics (PBL) Award, Components Level, F414 Engine PBL;
2012 CNO Aviation Safety Award;
2012 CNO Safety Excellence Unit Award for Medium Industrial, Shore Activity;
2012 JAXUSA Partnership Industry Leader Award for Business Achievements/Corporate Citizenship; and
2011 NAVAIR Commander's Award: FRCSE Environmental Program Team – Program Management

SUMMARY OF ACCOMPLISHMENTS/TECHNICAL MERIT

1. **Process Improvements:**

a. **Implement More Efficient Industrial Wastewater Treatment:** FRCSE's environmental team continues to implement process changes at two industrial wastewater treatment plants to reduce hazardous material (HM) and potable water use, and reduce hazardous waste (HW) generation. Working with treatment plant personnel, production and engineering, the environmental office targeted point source waste streams for reduction, implemented more cost effective operating procedures for water treatment, and leveraged existing capabilities of Southeast Naval Facility Engineering Command (NAVFAC) Public Works Department for final water treatment. In recent years, FRCSE has reduced

its annual HW stream from the treatment plants by more than 50 percent and reduced significantly the cost of its annual operations. In addition, as a target of EMS, a contract has now been awarded to replace the current, aging treatment plants with high efficiency wastewater treatment technologies that will optimize water reuse and further reduce treatment costs. Contract completion is expected in 2017.

b. **Improve Material Management:** FRCSE renewed its efforts to reduce HM procurements, improve shelf life management, and reduce HM waste. During Fiscal Year (FY) 15, the environmental office reduced the number of expired shelf-life items by more than 3,500, reduced HM procurement costs by $86,000, and reduced HM waste by more than 1,200 lbs. The success of this effort is attributed to accurate inventory by accounting for all the material, reducing inventory to control costs, and by storing compatible and accurate quantities to reduce/eliminate potential accidents and shelf-life problems. FRCSE ensures all HM orders are logged in HM Management System to eliminate duplicate HM ordering.

c. **Improve Production Waste Cost Savings:** One of the largest HW streams at FRCSE is production waste generated by the various aircraft lines. In years past, FRCSE used large roll-off containers to dispose of this waste stream at a cost of approximately $30,000 per year, to include associated drop fees, rental
fees, and light load fees. In July 2014, FRCSE purchased and began using a waste compactor for this production waste stream. The compactor uses 1.8 cubic yard Department of Transportation (DOT) shippable bags at a cost of only $45 per bag. Over the course of FY15, FRCSE spent nearly $4,000 on these 1.8 cubic yard bags, for a cost savings over the roll-off container method of approximately $26,000 per year.

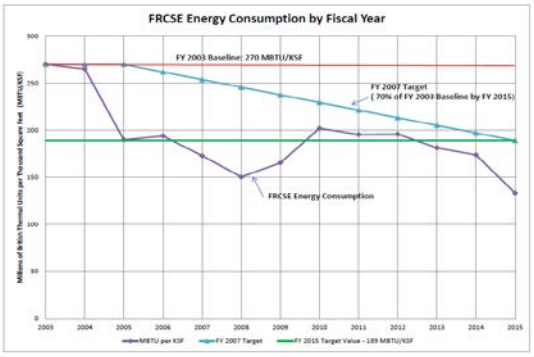
d. **Environmental Wildly Important Goal:** The FRCSE environmental office established a Wildly Important Goal (WIG) to develop environmental acumen down to the individual shop level. This effort involved four specific actions to help achieve this goal: training each artisan, coaching the shops, scoring their performance, and reviewing and correcting the procedure. The WIG effort increased shop awareness and adherence to environmental compliance requirements and resulted in an 80 percent decrease in the number of non-conformities found during shop reviews. The below chart summarizes pre-WIG non-conformity findings for all shops, which totaled 146, and from the most recent review the number of non-conformity findings totaled only 29.

635 Industrial Environmental Division

Number of Findings:	2012 Pre-4D	Most Recent 4D Review
621 Manufacturing Division	7	2
622 P-3 Line	0	1
623 Structural/Mechanical Division	9	3
624 Avionics	3	3
625 H-60 Line	5	5
626 Engines Branch	32	0
627 Industrial Processes Division	55	5
628 F/A-18 Line	8	9
629 EA6B/Trainers Line	5	0
632 Mega Centers	6	0
633 Plant Maintenance	15	1
434 Materials Lab	1	0
Totals:	146	29

2. **Compliance with EO 13423, EO 13514, and EO 13693:** In 2015, FRCSE saw the largest reduction in MBTU/KSF since 2005 and program induction. Well below our program targets, FRCSE continued to complete projects toward even greater energy conservation.

Energy Performance: FRCSE commenced a major energy project in FY15 that upgrades the Aircraft Paint Hangar, which is scheduled to be completed by 1 December 2015. FRCSE continues to develop and coordinate projects with the NAS Jacksonville installation and Southeast Regional energy management teams. In FY15, FRCSE and the regional energy management team focused on base steam reduction and high-efficiency lighting systems.



3. **Environmental and Economic Performance:** Highlights of FRCSE environmental, energy, and economic performance during the period are captured in the table below identifying projects that support the goals EO 13423, EO 13513, EO 13693, and mission sustainment at reduced cost.

Project Description	Status	Environmental Performance		
		Economic or Avoidance $s	Energy and Environment	Stakeholder Relations
Reduce HW and Water use in Wastewater Pre-Treatment	On-going	Sustainability Improvement	Design contract awarded to modernize treatment plants; Expected to reduce HW generation by 50 percent and significantly reduce operational cost	
Reduce Energy Use	On-going	Sustainability	Energy improvements: Steam reduction and high-efficiency lighting systems	
Reduce Cadmium (Cd) Electroplating	On-going	Sustainability Life Quality	Eliminate Cd electroplate (except fasteners and couplings); Establish ZnNi capability mid 2016	
Eliminate Silver Cyanide Electroplating	On-going	Sustainability Life Quality	Eliminate Silver Cyanide Electroplate; Establish non cyanide silver capability early 2016	
Eliminate CFC 113 Use for Oxygen Cleaning	Complete	Sustainability Life Quality	New solvents are in use. All workload is transitioned	
Eliminate Hard Chrome Electroplating	On-going	Sustainability Life Quality	Establish nCoP capability late 2017; Reduce process time	

Use of Non-Chromate Primers	On-going	Sustainability Life Quality	Eliminate use of Chromate Primers on P-3 and Trainer aircraft by end of FY16
Improve Material Shelf Life Management	On-going	Sustainability $ 86,000 per year	Reduce number of expired shelf life items 3,500 per year, reduce waste by 1,200 lbs. per year
Implement use of air-assisted airless paint guns	On-going	Sustainability $15,000 per year	Transitioned to external fuel tanks recoating in paint Hangar
Engine Component Rhenium Reclamation	FY15	Sustainability Navy Credit	Rhenium totals for FY15: 17,270 lbs. (8.7 tons) Credits from this metal reclamation comes back to the Department of the Navy.
Engine Component Metal Reclamation	FY15	Sustainability Navy Credit	Metals Reclamation Program expanded. Presently identified as NAVAIR Original Equipment Manufacturer (OEM) Propulsion Exchange Program. Thermal Barrier Coated components are now being recycled. FY15 totals and OEM metals: 97,795 lbs. (49 tons); Credit from this metal reclamation comes back to the Department of the Navy.
Reclaimed 2 EA-6B Aircraft	FY15	$14.5 million Part Recovery	Reclaimed two aircraft and recycled more than 37,000 lbs. (18.5 tons)
Cardboard Recycling	FY15	Sustainability	Solid Waste Diversion (85 tons/170,000 lbs.)
Misc. Materials Recycling	FY15	Sustainability	Bottles/cans, 10,180 lbs; Paper, 65,000 lbs.; Lead acid, 5740 lbs; Lead Acid battery core credits being applied to final battery costs; Cost avoidance, immediate savings to FRCSE.
Scrap to Defense Realization and Marketing Office/Defense Logistics Agency	FY15	Sustainability	256,028lbs. (128 tons)
Wood Recycling	FY15	Sustainability	251,000 lbs. (126 tons)
Universal Waste for Recycling	FY15	Sustainability	Lamps, 1054 lbs.; Recycled batteries, 631 lbs.
Energy Recovery	FY15	Sustainability	Used oil, Waste to Energy: Used oil (161 tons/48,340 gallons)
DOT Shipping Reduction for HW	FY15	Sustainability $26,500 per year	Poly bags cost: $3,736.74 per year; Roll-offs cost: $30,240 per year.

4. **Recycling Programs:** FRCSE continues to champion recycling to minimize impact to natural resources, cut cost, and reduce the amount of waste sent to landfill.

a. **Diversion from Landfill:** During FY15, FRCSE diverted 250 tons of landfill waste that included recycled bottles, cans, mixed paper, cardboard, metals, lead acid batteries, rubber, and wood. FRCSE also recycled over 1,680 lbs. of universal waste including bulbs, lamps, and sealed batteries and continues to recycle cathode ray tubes and printed circuit cards.

b. **Metals Reclamation:** During FY15, FRCSE reclaimed eight tons of turbine blades for Rhenium extraction and remanufacture of new turbine blades. The expansion of NAVAIR OEM propulsion program has reclaimed 49 tons of F-404, F-414, and TF-34 engine component metals.

c. **Returning Value to the Fleet:** Under the Navy's Stricken Aircraft Reclamation and Disposal Program, the Naval Supply Systems Command funded the demilitarized two EA-6B aircraft, recovered parts valued at $14.5 million and recycled more than 37,000 lbs. of aircraft aluminum during FY15.

d. **Recycle Used Oil and JP-5 Fuel:** FRCSE recycled 160 tons of used oil for energy recovery and reduction.

ORIENTATION TO MISSION

1. **EMS Program:** FRCSE considers environmental stewardship to be a business imperative and is committed to the goals of EO 13693 and the DoD Strategic Performance Plan. Accordingly, FRCSE is dedicated to maintaining ISO 14001 certification and adhering to the elements of the standard to ensure visibility across the enterprise. FRCSE ensures all significant aspects of its process activities are identified and programs are implemented to conserve resources, reduce waste, and ensure environmental compliance at the least cost.

2. **Continuous Improvement:** FRCSE considers continuous improvement vital to its future and key to mission sustainment. The command maintains a continuous improvement database to record all discrepancies and ensure root-cause analysis is performed prior to closure of findings. FRCSE views audit findings as an opportunity to improve environmental compliance. To that end, FRCSE is fully committed to both internal and external reviews of its programs, including reviews of its EMS program against the ISO 14001 standard and the Quality Management System requirements of ISO 9001:2000 and AS9100:2004. Further, the EMS surveillance audit conducted by the external ISO 14001 auditor resulted in zero findings. The EMS program was also highly commended by NAVFAC during their recent EMS audit of NAS Jacksonville.

3. **Environmental Training:** FRCSE is fully committed to an in-depth employee environmental training program to ensure compliance, reduce pollution, and facilitate continuous improvement. General environmental awareness training, including an overview of the EMS system, HM requirements, HW requirements, and storm water pollution prevention fundamentals, is provided to all new employees and is reinforced through a system tailored to employee job function and production personnel and contract personnel are also required to complete specific, shop-level environmental awareness training led by their immediate supervisor. In addition, the FRCSE Environmental Office provides quarterly HW awareness training to all production personnel and in-depth annual HW training to supervisors and employees assigned as HW coordinators.

TRANSFERABILITY

1. **Environmental Compliance Assessment and Management Program:** FRCSE has a comprehensive compliance assessment program and an Internal Assessment Plan (IAP) to ensure that the requirements of environmental laws and regulations are met. The IAP requires complete compliance evaluations be routinely performed and scheduled inspections be conducted of the following FRCSE programs to ensure their effectiveness: EMS and P2, air, fuel/oil and water, HW and solid waste; HM control, contract projects, and other operational programs.

FRCSE EMS management reviews are held annually and include a comprehensive review of compliance audits and EMS performance, in terms of mission benefits and cost avoidance.

The FRCSE environmental team provides effective environmental project reviews for all new or modified processes and performs National Environmental Policy Act (NEPA) analyses when required. The team reviewed 20 NEPA actions during FY15 and recommended reductions in projects environmental aspects/impacts.

2. **Technology Transfer and Integration:** The FRCSE environmental office teams with materials and process engineers to ensure full-engagement with various technology development programs to support Naval aviation needs and meet pollution prevention and waste minimization goals. FRCSE supported several initiatives to eliminate toxic materials currently in-use on the production floor, including: (1) non-cyanide silver plating as a replacement to cyanide silver plating, with target transition to production in early 2016; (2) zinc nickel plating as an alternative to cadmium plating, with target transition in 2016; and (3) nano-crystalline cobalt-phosphorus plating technology as a replacement for chrome plating, with planned transition in 2017. In addition, a two-year Fleet test with 100 arrestments is currently underway for T-45 trainer aircraft arresting hooks that are hard coated with nCoP.

FRCSE is also testing a hexavalent chrome alternative for magnesium pretreatment to replace the high temperature chromate process with room temperature non-chromate solutions, which will completely eliminate hexavalent chrome from sealing operations on the advanced anodizing line. This improvement will reduce energy costs and reduce personnel exposures to the highly toxic hexavalent chrome. FRCSE is also testing trivalent chromium replacements for aluminum pretreatments to improve corrosion performance.

STAKEHOLDER INTERACTION/EDUCATION OUTREACH AND PARTNERING

FRCSE is a charter member of the Northeast Florida Environmental Compliance Partnering Team. The team's goal is to promote environmental compliance and sustainability through a cooperative effort aimed at environmental excellence. FRCSE also supports the nation's annual Earth Day celebration by employee participation in all local events.

PROGRAM IMPACT

FRCSE has established a culture of environmental stewardship within its gates which is second to none, as illustrated by winning the prestigious environmental award for two consecutive years (FY14 and FY15) from the FCMA against competition that included major national companies. The combined efforts highlighted in this document along with our commitment to our environmental management system have ensured the sustainability of our current and future efforts in the years to come.