

memorandum

DATE: January 19, 2011

REPLY TO
ATTN OF: Y12-40:Sundie

SUBJECT: **STAFFING PLAN FOR THE NATIONAL NUCLEAR SECURITY ADMINISTRATION Y-12
SITE OFFICE**

TO: Karen Boardman, Chairman, Federal Technical Capability Panel, National Nuclear Security
Administration Service Center, ABQ

Reference: Memorandum from Chairperson, Federal Technical Capability Panel to Agents,
Annual Workforce Analysis and Staffing Plan Report for Calendar Year (CY) 2010, dated
October 28, 2010

We have completed our analysis of staffing needs per the guidance in the referenced
memorandum. Our revised staffing plan for the YSO is attached.

Should you have any questions, please contact Terry Olberding at (865) 576-2550.



Theodore D. Sherry
Manager
Y-12 Site Office

Attachment:
As Stated

cc w/attachment:
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T. E. Vereb, Y12-10, YSO
D. R. St. Pierre, Y12-20, YSO
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Annual Workforce Analysis and Staffing Plan Report
As of December 31, 2010
Reporting Office: Y-12 Site Office

Section One: Current Mission(s) of the Organization and Potential Changes

- A. The Y-12 Site Office (YSO) mission is to support National Security in the manufacture and rework of nuclear weapon components, dismantle nuclear weapon components returned from the military, serve as the nation's warehouse for enriched uranium, provide special production support to other programs, support Nuclear Nonproliferation initiatives, and support other federal agencies through the Work for Others Program. To accomplish these missions, the following (non-exclusive) activities are conducted:
- Ensure effective contract oversight
 - Oversee the safe operations of nuclear missions and activities;
 - Effectively re-manufacture, accept, surveil, and assess all uranium, lithium, and secondary components in the nuclear stockpile while protecting personnel and the environment;
 - Store, process, and disposition uranium, lithium, and secondary components associated with the nuclear stockpile;
 - Manage the processing and storage of highly enriched uranium and lithium for Defense Programs;
 - Dismantle nuclear weapons subassemblies;
 - Modernize and transform Y-12 by consolidating operations and modernizing facilities and infrastructure.
 - Conduct Nuclear Nonproliferation activities;
 - Maintain technical capability for nuclear weapons development and production;
 - Oversee line item and GPP/GPE construction projects;
 - 245M American Recovery and Reinvestment Act (ARRA) work and Oversight
 - Manage facilities which support assigned programs; and
 - Other programs as assigned
- B. The YSO is currently working on new or changing missions as follows:
- One of YSO's primary roles is in maintaining effective oversight of all contracts and contracting operations managed at Y-12. This includes oversight of a large Management and Operating (M&O) contract, a large Safeguards and Security (S&S) contract, and several other Prime Contracts supporting the various missions at Y-12. The total budget authority for these contracts is approximately \$1 Billion or more annually, depending on the construction activity for each given year.
 - In April 2010, the Nuclear Posture Review called for a reduction in the future stockpile complemented by the modernization of an aging nuclear infrastructure. Due to the magnitude and complexity of the modernization efforts at Y-12, additional oversight is necessary to ensure requirements are met. Plans are to consolidate the manufacturing operations into a smaller facility "footprint" to allow more efficient and integrated operations. The focal point of the modernization effort is the consolidation of all enriched uranium in the Highly Enriched Uranium Materials Facility (storage) and the Uranium Processing Facility (manufacturing). A new Perimeter Intrusion Detection and Assessment System (PIDAS) will enclose the two facilities which will reduce the site's Protected Area by approximately 90%. Y-12 will also be accelerating the dismantlement of weapon components and consolidating some operations and nuclear material. This will necessitate YSO support and oversight of M&O startup and/or restart activities under the revised DOE Order 425.1D. For these reviews, technical individuals from the Operations Management, Program & Business Management, Safeguards & Security, and Engineering, Safety, and Environment organizations independently evaluate the contractor's state of readiness. YSO will also utilize the NNSA Service Center to supplement and/or support these efforts on an as-needed basis.
 - Over the last several years, Y-12 has aggressively pursued process and productivity improvements that resulted in cost savings and cost avoidances. YSO oversight of these activities includes validation of contractor claims and review of selected projects and initiatives. This area is expected to receive increased emphasis over the next several years.
 - The Y-12 National Security Complex provides support to virtually all of the NNSA nonproliferation programs. As the NNSA representative in Oak Ridge, YSO is involved with oversight, coordination and providing contractor direction and performance evaluation. Among the Nonproliferation programs supported are the HEU Transparency implementation Program, Global Threat Reduction Initiative, International Material Protection and Cooperation, International and Domestic Fissile Materials Disposition Programs, Export Control, Second Line of Defense, compliance with START treaties, and Russian Strategic Rocket Forces activities. Depending on international events, it is possible that the Y-12's level of participation in these programs could increase of the coming years. In addition, B&W is actively seeking to increase the Work for Others activities at the site.

- YSO added three individuals from the NNSA Future Leaders (FL) Program in 2009 and one individual in 2010. These positions are not counted in the FTE baseline level. These positions are funded separately for the first 2-year period while they complete a prescribed training program. In June of 2011, three of the positions will be counted against the YSO baseline and one position will be counted against the FY2012 baseline in June 2012. All of the Future Leader Candidates participate in the Technical Qualification Program; one in Facility Maintenance; one in Fire Protection/SSO, one in Industrial Hygiene and one in the Nuclear Safety Specialist functional qualification area. YSO plans to recruit additional FLPs as needed in specific subject matter areas to ensure continuity in the oversight function. NNSA Headquarters has approved YSO to recruit three additional FLPs in 2011 to be counted in the baseline in 2013; one of these FLPs will be qualifying as a Facility Representative, one as a Facility Quality Assurance Engineer, and one will be in the Business Management area.
- The amount of work to be performed on line item projects is expected to increase significantly over the next several years. Total annual line item expenditure will increase from approximately \$200M to a peak of \$350 in 2013. At this time work will level until dropping sharply in 2016. This assumes that no new line item projects are started during this period. UPF will represent the bulk of the work at the site starting in 2011 (88% of line item work). The percentage of UPF work will continue to increase each year until it essentially represents 100% of the work at the site. Therefore, for planning purposes, it can be assumed that additional Federal resources needed for YSO line item oversight will be required for the UPF project. Needed FTEs for each project were determined by FPDs via evaluation of project-specific work scope and considering the OECM IPT Staffing Model presented in the Draft DOE G 413.3-19 *Federal Staffing Guide for Project Management*. The current YSO approach to meeting federal staffing requirements is to use a combination of full time federal support for a core team (40%), traditional Federal IPT matrix support (10%), and PMSO Contractor support (50% - funded by the impacted programs).
- The Y-12 National Security Complex is working to improve Quality Assurance (QA) across all Y-12 activities and implement NQA-1 as its consensus standard. Significant issues and impacts have resulted from inadequate QA implementation on major construction projects and normal operations. Development of an integrated QA system and application of IQM tools to strengthen quality execution will ensure Y-12 applications meet the expectations and requirements of Department of Energy (DOE) Order 414.1C, 10 CFR 830, and NQA-1-2008. Additional YSO oversight and involvement will be needed as the site works through this process.

Section Two: Technical Staffing

Number of Hazard Category 1, 2, or 3 Nuclear Facilities:

HC 1 0 HC 2 10 HC 3 2

Number of Radiological Facilities: 62

Number of Chemically Hazardous Facilities: 19

Number of Documented Safety Analyses: 13

Number of Safety Systems: 105

Number of Site Contractor FTEs: ~8000

Number of Federal Office FTEs: 81 (See Note 1)

Note 1: This is YSO's current staffing ceiling and includes technical and administrative federal personnel.

Section Two: Technical Staffing (continued)

Table 1: YSO Staff Positions

TECHNICAL FUNCTIONAL AREA	For All Facilities ¹		COMMENTS
	No. of FTEs Needed ¹	No. of FTEs Onboard ¹	
Senior Technical Safety Managers	6	4	Deputy Manager position vacant due to transfer; Asst. Manager for Operations Management vacant due to retirement; backfill in progress for both positions. Lead Operations Engineer qual in progress.
Safety System Oversight (SSO)	4	4	Quals in progress for 1 SSO Engineer; 1 FPE Qualified as an SSO Engineer and 1FPE FLP qualifying as an SSO Engineer.
Facility Representatives	11	10	1 FLP to be recruited in 2011 and added to the baseline in FY13.
Nuclear Safety Specialist (NSS)	4	3	Performed by Authorization Basis Engineers; 1 AB/SSO Engineer position to be filled by FLP in 2012. Surge capacity will be provided by a support service contractor when required.
Other Technical Capabilities:			
Aviation Manager	0	0	Pursuing an order exemption for this function.
Aviation Safety Officer	0	0	Pursuing an order exemption for this function.
Chemical Processing	0	0	Function covered by SSO Engineer (see Note 2)
Civil/Structural Engineering	0	0	Functions covered by Project Managers; support from Service Center as needed.
Construction Mgmt	0	0	Function covered by Project Managers
Criticality Safety	2	1	Vacancy to be covered by a support service contractor.
Electrical Systems	0	0	Function covered by SSO Engineer (see Note 2)
Decontamination & Decommissioning	0	0	Collateral duty for 1 Facility Representative; D&D Quals in progress
Emergency Management	0	0	Function covered by FPE (see Note 2)
Environmental Compliance	2	1	1 position to be filled by FLP in 2014; supported by two ORO SMEs on a part time basis.
Facility Maintenance Mgmt	2	1	FLP in training and will be added to baseline in FY2011.
Fire Protection Engineering	2	1	FLP in training and will be added to baseline in FY2011. Also qualifying as an SSO Engineer
Industrial Hygiene	1	0	Function currently covered by Radiation Protection position (See Note 2). FLP in training and will be added to baseline in FY2011.
Instrumentation and Control	0	0	Function covered by SSO Engineer (see Note 2)
Mechanical Systems	0	0	Function covered by SSO Engineer (see Note 2)
Occupational Safety	1	1	
Operations Engineer	0	0	Covered by Technical Training and Facility Maintenance Engineers (See Note 2)
Lead Operations Engineer	0	0	Included as an STSM position; Quals in progress
Lead Quality Assurance Engineer	1	0	Recruitment in progress
Weapons QA Specialist	0	0	Function covered by Weapons QA Engineer position
Weapons QA Engineer	2	2	
Quality Assurance	2	1	1 FLP to be recruited in FY11 and added to the baseline in FY13.

Radiation Protection	1	1	
Senior Technical Program Manager	3	3	
Safeguards and Security	9	9	Quals in progress for 2 individuals.
NMC&A Specialist	2	2	1 FLP to be recruited in FY12 and added to the baseline in 2014.
Cyber Security/Information Technology Specialist	2	2	
Safety Software Quality Assurance	0	0	Function covered by Weapons QA Engineer (See Note 2)
Technical Program Manager	3	3	Cost Engineer qualifications in progress.
Technical Training	2	1	1 FTE covered by support service contractor
Transportation & Traffic Mgmt	0	0	Function covered by SSO Engineer and Occupational Safety position (roadway/rail) (See Note 2)
Waste Management	0	0	Function covered by Environmental Compliance position (See Note 2)
Senior Project Director	2	2	
Project Director	1	1	
Senior Nuclear Engineer	1	1	
UPF Project Team			
Senior Project Director	2	2	
Project Director	2	2	
Program Manager	1	1	
Project Quality Assurance	1	1	
Project Facility Representative	1	1	
Project Engineering & Design	1	0	Not in baseline FTE target; needed in FY11
Project Nuclear Safety Engineering	1	0	Not in baseline FTE target; needed in FY11
Project Criticality Safety Engineer	1	1	
Project Construction Safety	1	0	Not in baseline FTE target; needed in FY13
Project Construction Quality Assurance	1	0	Not in baseline FTE target; needed in FY 13
Project System Testing Engineer	1	0	Not in baseline FTE target; needed in FY13
Total Technical Positions	79	62	

Note 1: Facilities, systems, personnel and authorities listed should be those in the organization's immediate line authority. The YSO list includes Federal Staff, Future Leaders, and Support Contractors.

Note 2: Many of the current YSO staff members are covering multiple functional areas. Fortunately, this is due to the high level of technical expertise and experience of the individuals in these areas. This capability will not necessarily be available in future years, resulting in a need for additional staffing.

Section Two: Technical Staffing (continued)

The basis for the YSO Technical staffing summary staffing levels was determined utilizing the methodology guidance provided to the FTCP Agents. The YSO analysis was subdivided into the following groups.

1. Facility Representatives – The process for determination of the appropriate amount of FR oversight is an analytical method given the facility hazard level, operational activity and complexity, and programmatic importance.
2. Safety System Oversight Engineers -- The process for determination of Safety System Oversight (SSO) staffing levels is based on and adapted from the process used to determine Facility Representative staffing levels. For YSO, these positions cover Chemical Processes, Instrumentation, Metallurgical, Mechanical Systems, and Fire Protection.
3. Technical Qualification Program -- The process for determination of Technical Qualification Program (TQP) staffing levels is based on and adapted from the process used to determine Facility Representative and Safety System Oversight (SSO) staffing levels. The TQP staff consists of federal personnel qualified to a Functional Area Qualification (FAQ) Standard that is needed over and above the facility representatives, the SSO staff, the safety management program oversight staff, and the senior technical safety managers to ensure operational safety and mission accomplishment. The YSO TQP was further subdivided into the following groups.
 - a. Senior Technical Safety Managers
 - b. Operations Management – Operations, Facility Maintenance, Technical Training
 - c. Safeguards & Security – Physical, Cyber, Information, Industrial, and NMC&A
 - d. Technical Program Managers
 - e. Technical Subject Matter Experts – Authorization Basis, Industrial Hygiene, Environmental, Fire Protection, Radiological Protection, Emergency Management, Weapons Quality Assurance, Software Quality Assurance, Facility Quality Assurance
4. Senior Project Directors/Project Directors are part of the TQP and the staffing levels determined based on the amount of oversight work to be performed on line item projects planned at the Y-12 Site.
5. Senior Technical Safety Manager (STSM) – The process for determination of STSM positions was made based on YSO's organizational structure. YSO Senior Management unilaterally determined that all senior technical/safety positions would qualify as an STSM. Consequently, the 6 designated STSM positions in YSO are the Manager, Deputy Manager, Assistant Manager for Operations Management; Project Directorate Manager, Assistant Manager for Engineering, Safety, and Environment and the Lead Operations Engineer.
6. In the process of performing these staffing analyses, consideration was made to situations where the SSOs, FRs, and SMEs provide assistance to each other to meet oversight responsibilities without increasing the number of FTEs.

Section Three: Current shortages and plans for filling them

The following are the anticipated shortages for YSO in the critical technical capabilities/positions and are prioritized in hiring order. These positions are contingent upon retaining current staff.

1. Deputy Manager – Position vacant due to transfer; backfill in progress
2. Assistant Manager for Operations Management – Position vacant in March, 2011; plans are to backfill
3. Lead Quality Assurance Engineer - Position is needed to provide oversight of all Facility and Weapons Quality Assurance functions and programs at Y-12 and provide technical direction to, and coordinate oversight activities of the YSO QA Engineers.
4. Maintenance Engineer – (NOT in the baseline FTE target) Needed to provide adequate oversight of Y-12 Maintenance programs. Using existing Maintenance Engineer Future Leader with Maintenance Engineer to perform function while future leader is in training. FLP to graduate program in 2011.
5. Fire Protection Engineer/SSO (NOT in the baseline FTE target) – To provide adequate oversight for Y-12 fire systems and fulfill the SSO function for safety-significant systems. Using existing FP Future Leader with ES&H Team Lead oversight to perform the function while Future Leader is in training; FLP to graduate program in 2011.
6. Industrial Hygienist – (NOT in the baseline FTE target) – To backfill for IH retirement. Currently using RADCON position to perform the function while Future Leader is in training; FLP to graduate program in 2011.
7. Authorization Basis Engineer/SSO (NOT in the baseline FTE target) - To backfill for AB Engineer transfer to the UPF project and provide adequate staffing for the AB workload. Using existing FLP with Nuclear Safety Team Lead to perform function while Future Leader is in training; FLP to graduate program in 2012.

Section Four: Projected shortage/surplus over next five years

The following are projected shortages in the technical capabilities/positions to be filled in fiscal years 2010 through 2014. This position is contingent upon retaining current staff. The shortages are relative now and will increase as the UPF project continues to progress through design, construction, and operation

1. UPF Core Team Support – A total of 6 Technical FTEs are needed (NOT in baseline FTE target) to serve full time on the UPF Core Team starting in 2011 and ending in 2013. Options for filling these positions are being evaluated. Proposed oversight roles and the needed year are listed below:
 - a. 2011 – Project Engineering & Design – The vacant slot is being completed as a collateral duty by the Deputy Federal Project Director. Over 50% of the design (over \$200M of work) remains to be completed on the UPF project, and a full-time position is required to adequately oversee the finalization of the design and safety basis development.
 - b. 2011 – Quality Assurance - Procurement activities are beginning in FY 2011, and will continue to ramp up on the UPF project. Following the equipment procurement activities, construction activities will commence and be significant throughout the project life-cycle.
 - c. 2011 – Nuclear Safety Engineering – The Preliminary Safety Verification Report will be submitted in FY 2011 for approval. Full-time support is required to adequately oversee the approval and implementation of design activities for the safety systems on UPF.
 - d. 2013 – Construction Safety – Heavy construction will start in FY 2012 and will continue until FY 2020. Federal oversight of construction safety will be a full-time activity once construction begins.
 - e. 2013 - Construction Quality Assurance – Construction quality will be a very important functional area that will define the success during the execution phase of the project. Full-time oversight will be required starting in FY 2013.
 - f. 2013 – System Testing Engineer – A system test engineer will be required during the development of system test procedures to coordinate Safety System Oversight support of all the safety systems associated with the UPF project.
2. Criticality Safety Engineer – The position is needed to provide for a second NCS engineer that is needed to cover the NCS programs at Y12. Also, our Sr. NCS engineer/program manager is eligible to retire in 2013, but he is not expected to retire immediately. The plan would be to hire an experienced NCS engineer who with a few years of additional experience at Y12 would be able to take over the NCS program.
3. NMC&A Engineer -- Needed to fill anticipated shortage from retirement of incumbent staff. Plan to recruit FLP in FY2013.
4. Facility Quality Assurance Engineer – Needed to support oversight of NQA-I implementation and QA for non-UPF projects. Plan to recruit an FLP in FY2011.
5. Facility Representatives (1 position) – Plans are to recruit a Future Leader Program candidate.
6. Environmental Compliance Engineer -- YSO currently receives part time support from two DOE-ORO SMEs for the oversight of some Environmental Management program elements. YSO needs an additional SME to bring these functions in house. Plan to recruit FLP in FY2011.

Section Four (continued): Potential YSO Vacancies due to retirements over next 5 years

The following table shows the YSO technical positions occupied by individuals who meet retirement eligibility and will represent a potential staffing shortage.

Position	Retirement Eligibility					
	2011	2012	2013	2014	2015	2016
Nuclear Safety Specialists	1					
Technical Program Managers	2		3		1	
Facility Representatives	3		1	1	1	1
Senior Technical Safety Managers	1					2
Project Directors	1					
Safety System Oversight		1				
Security Specialists		1				1
Classification Analyst	1					
Security NMC&A	1					
Weapons QA Engineer	1					
Criticality Safety Engineer			1			
Technical Training				1		
Totals	11	2	5	2	2	4
Overall Total	26					

YSO PROJECTED NEEDS AND RECRUITMENT PLANS

Positions	FY2011		FY2012		FY2013		FY2014		Comments
	Needed	On Board							
Deputy Manager	1	0							Recruiting in progress
Assistant Manager for Operations Management	1	0							Vacant due to retirement; backfill in progress.
Lead Quality Assurance Engineer	1	0							Recruiting in progress.
UPF Project Engineering & Design	1	0							Needed to support the UPF Project
UPF Quality Assurance Procurement	1	0							Needed to support the UPF Project
UPF Nuclear Safety Engineer	1	0							Needed to support the UPF Project
Maintenance Engineer	1	0							Fill with FY09 FLP
Fire Protection	1	0							Fill with FY09 FLP
Industrial Hygiene	1	0							Fill with FY09 FLP
Authorization Basis/SSO			1	0					Fill with FY10 FLP
UPF Construction Safety					1	0			Needed to support the UPF Project
UPF Construction Quality Assurance					1	0			Needed to support the UPF Project
UPF System Testing Engineer					1	0			Needed to support the UPF Project
Quality Assurance					1	0			Fill with FY11 FLP
Facility Representative					1	0			Fill with FY11 FLP
Criticality Safety Engineer							1	0	Plans are to backfill
Environmental Compliance							1	0	Fill with FY12 FLP
NMC&A Engineer							1	0	Fill with FY12 FLP

The following table summarizes YSO staffing activities for **Future Leader Positions**.

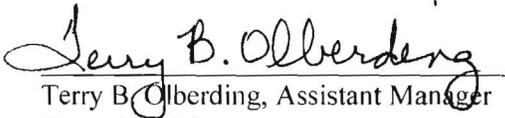
Positions	FY2011	FY2012	FY2013	FY2014	FY2015
Fire Protection Engineer/SSO	Recruit in FY09				
Maintenance Engineer	Recruit in FY09				
Industrial Hygienist	Recruit in FY09				
Authorization Basis Engineer		Recruit in FY10			
Facility Representative			Recruit in FY11		
Quality Assurance			Recruit in FY11		
Environmental Compliance Engineer				Recruit in FY12	
NMC&A Engineer				Recruit in FY12	

Section Five: General concerns or recommendations related to the Technical Staffing

1. Technical support contractor services in FY10 will ultimately be determined by the funding available. YSO's requirements are 2.1 FTEs broken down is as follows: 1-Technical Training; 0.1 Authorization Basis; and 1-Criticality Safety.
2. The YSO present staffing level baseline does not include positions necessary to absorb the Future Leaders currently in the program and those expected to be added in the future. We anticipate being able to absorb our Future Leaders accessions within our authorized headcount, but if FTE attrition turns out substantially different than projected, it could result in staffing overages or a skills mismatch.
3. YSO is challenged by short notice retirements due to a larger percentage of our workforce already eligible for retirement or will be eligible in the next 5 years. We have determined that approximately one third of our present staff will reach minimum retirement age in the next five years (see table in Section 4). The skill mix represented by this group affects all areas of the YSO, in particular the Facility Representative, Safeguards & Security, Business Management staffs, and the Subject Matter Experts that occupy 1-deep positions. The lack of entry-level positions to support succession planning continues to be a problem for effective skill preservation management. Absorbing Future Leaders into 1-deep positions that require a high level of competence immediately further complicates succession planning.
4. The Uranium Processing Facility (UPF) is a major project to build a modern, high-hazard nuclear project. This project which has an estimated project cost of between \$4.2 and 6.5 billion requires additional resources for design review and project oversight; this puts a strain on existing resources.
5. Any acceleration in the pace of the Integrated Facility Disposition Project (IFDP) could result in the need for additional YSO technical resources.
6. Many of the existing YSO technical staff members are covering multiple functional areas; the ability to handle this workload is due to the high level of technical expertise and experience of the individuals themselves. In future years, this level of competency may not be sustainable for the long term, which could result in the need for additional FTE resources in several functional areas.
7. It is expected that two contract source evaluations will begin in FY 2011 and conclude in FY2012. Both the WSI-OR (protective force) and PSI (drug/alcohol testing) contracts terminate in June 2012 and are linked to the Oak Ridge Office. Based upon the level of effort associated with the previous source evaluations, this will have a significant impact on YSO staff, particularly Safeguards and Security, i.e. working on the SEB will be full time work for weeks to months at time for approximately 12 to 18 months. The YSO protective force subject matter expert will not be able to participate due to recent previous employment as a contractor and the subject matter for personnel security is inexperienced working on a source evaluation board. YSO is determining how to accomplish this scope of work.

6.0 Concurrence and Approval

Concurrence:

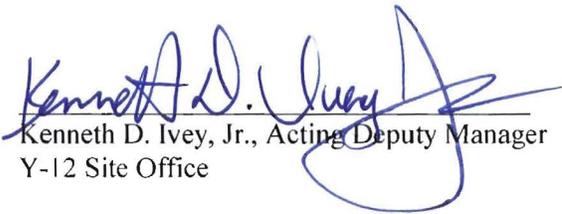

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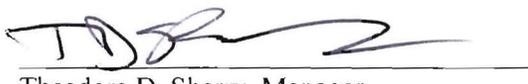

Thomas E. Vereb, Assistant Manager
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Donat R. St. Pierre, Assistant Manager
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Daniel K. Hoag, Senior Project Director
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Kenneth D. Ivey, Jr., Acting Deputy Manager
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