

Sandia's Assurance and Quality Maturity Journey

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What we're going to talk about

- Overview of Sandia's objectives and our organization's role in improving quality
- What is the Quality Maturity Assessment?
- How did the Quality Maturity Assessment evolve?
- What challenges did we face and how did we overcome them?
- What did we learn?
- How will this improve the delivery of quality products and services?

SANDIA'S QUALITY OBJECTIVES

Sandia has established strategic goals to improve performance

- From Sandia's Strategic Plan
 - Strategic Objective #3: Lead the complex as a model 21st-century lab
 - "Increase our own confidence...in our ability to effectively manage business and technical processes and deliverables"
- FY14 Strategic Performance Evaluation Plan (PEP) complement Strategic Objective # 3
 - *Performance Objective-4*: "Effectively and efficiently manage ... ; demonstrate accountability for mission performance and management controls; assure mission commitments are met with high-quality products and services; and maintain excellence"
 - *Performance Objective-5*: "Promote a culture of critical self-assessment and transparency across all areas.." "Demonstrate performance results through the institutional utilization of the Management Assurance System..."

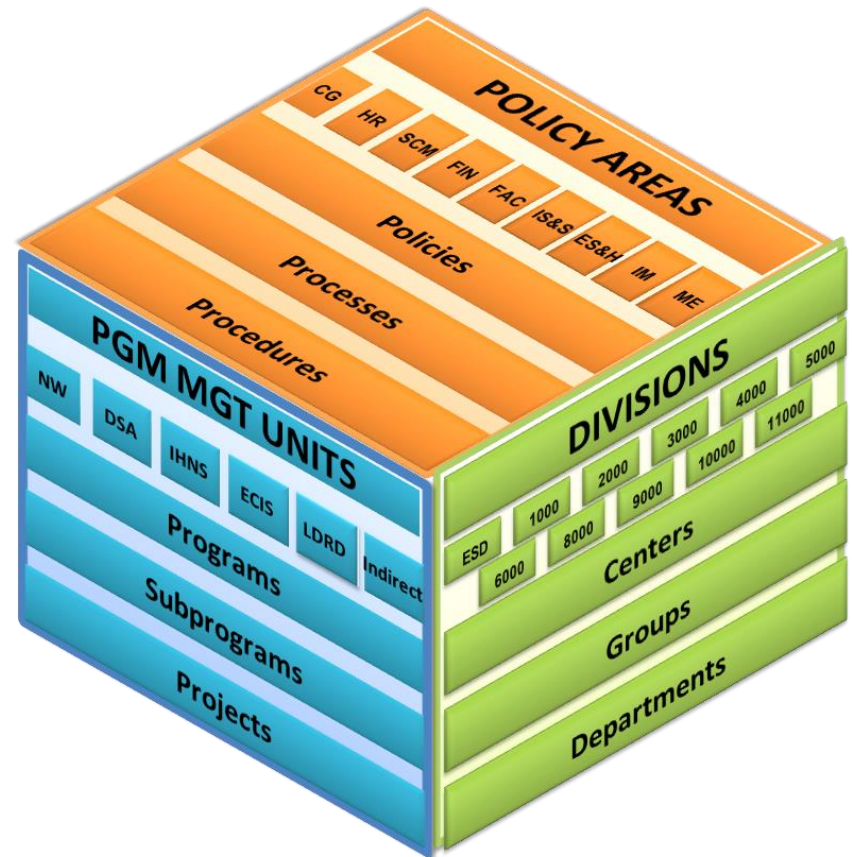
Group 00750 monitors Sandia's approach to delivering high quality products and services



- Sandia's quality expectation is that we will “meet customer and Sandia expectations consistently and predictably through flawless execution of personal and collective responsibilities”
- Management and Assurance Systems' (Group 00750) goal is to enable the delivery of high quality products and services using a Plan-Do-Check-Act workflow
- Group 00750 is accountable to provide visibility as to whether Sandia is meeting quality expectations

Sandia's organization is distributed

- Responsibility and accountability delivery of quality products and services is distributed across 24 Management Entities
- To assess Sandia's "health of quality" we need to assess all entities
- We seek to understand how work is done across organizational boundaries



THE ASSURANCE MATURITY ASSESSMENT

The beginning:

Assurance Maturity Assessment

- In 2011, the Assurance Maturity Assessment (AMA) was designed as a way to measure the effectiveness of Sandia's Performance Assurance System
- A maturity approach was used rather than an audit to
 - Drive improvement and progression rather than “check the box”
 - Establish a baseline
 - Acknowledge the graded approach
- Maturity levels were defined to promote understanding of what we must do

*NAP-21

Maturity levels were designed to promote a dialog

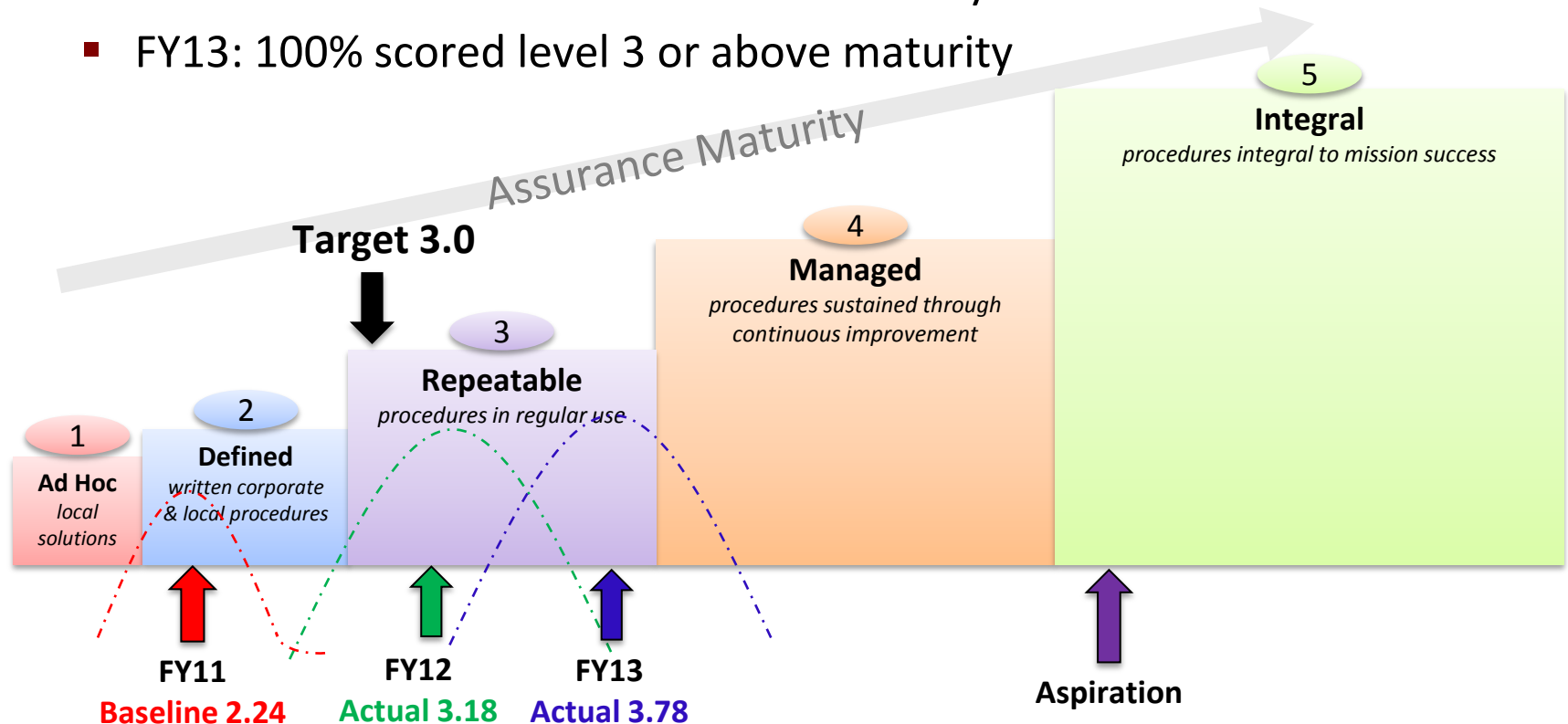
Sandia's Assurance Maturity Model- Levels 1-5

1. *Ad Hoc* – local point solutions
2. *Defined* – written corporate and local procedures
3. ***Repeatable* – procedures in regular use**
4. *Managed* – procedures sustained through continuous improvement
5. *Integral* – procedures integral to mission success

AMA resulted in measurable improvements

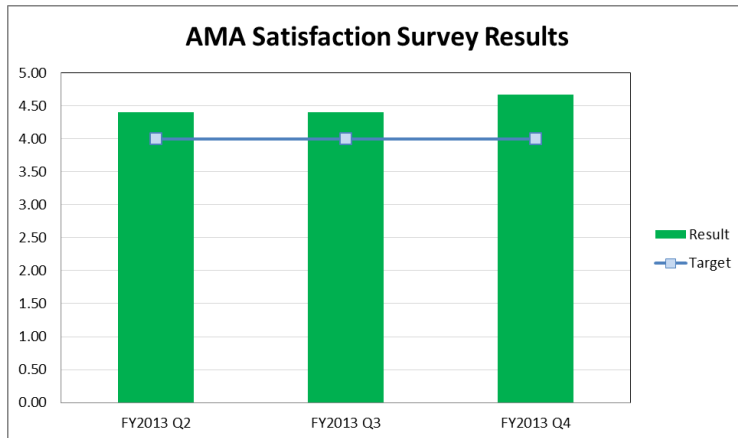
Measured 5 aspects of assurance for 3 years

- FY11: 29% scored level 3 or above maturity
- FY12: 91% scored level 3 or above maturity
- FY13: 100% scored level 3 or above maturity



Best practices from AMA

- Leadership Engagement and high visibility (through metrics and management review) brought attention to assurance
- Mentoring and coaching increased engagement and understanding
 - Team the right competencies
 - Develop and improve relationships



Comment from an Entity Representative:
“The coaching was very helpful. I liked the expertise and willingness to suggest alternatives and provide examples of what others have done.”

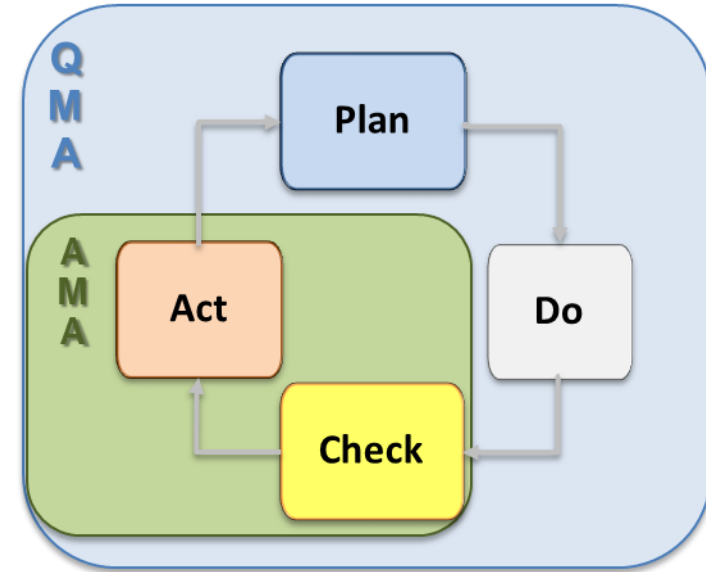
IMPLEMENTING THE QUALITY MATURITY ASSESSMENT

In FY13 Sandia focused on defining and improving its quality program

- External and internal reviews found gaps
- Sandia's management and stakeholders need data-based answers to understand "the health of quality"
- FY13 efforts defined expectations for quality
 - Quality Declarations
 - Declare and endorse quality standard in use (e.g.; ISO 9001, DOE O 414.1D, AS9100)
 - Quality Self-Ranking
 - Simple self-assessment of what management entities believed their maturity to be
 - Some management units participated in appreciative inquiry exercise
 - Sought understanding of how our diverse, distributed organizations were implementing expectations

The evolution: AMA becomes QMA

- Sandia's focus on improving quality products and services drives us to assess implementation of quality
- The structure of AMA has proven effective so we will use it to assess Quality
 - Assurance is determining how effectively the work is done (checking and acting on the work)
 - Quality is the entire Plan-Do-Check-Act cycle
- QMA will use mentoring for shared learning and to drive improvement



Challenges of moving from AMA to QMA required collaborative solutions (1 of 3)

- **Challenge:** Entities were reluctant to be mentored.
- **Solution:** The QMA team partnered with the Quality Roundtable (a self-formed practitioner working group) provide a forum for self-mentoring
- **Lessons Learned**
 - Practitioners have more influence over each other than the Corporate Governance team does.
 - A functional “Community of Practice” like the Quality Roundtable increases chances of sustainability by sharing knowledge with more people and using collaboration to improve work products

Challenges of moving from AMA to QMA required collaborative solutions (2 of 3)

- **Challenge:** Expanding the assessment scope added complexity and caused some confusion
- **Solution:** We have slowed our schedule and revised our approach allow for the Quality Roundtable, QMA, and implementers to gain clarity of the objectives
- **Lesson Learned**
 - Initiatives that require engagement and participation from other groups should be developed in partnership with those organizations
 - Flexibility to modify our approach allowed us to improve our working relationships, clarify expectations, and increase our confidence in the fidelity of our assessment

Challenges of moving from AMA to QMA required collaborative solutions (3 of 3)

- **Challenge:** Applying the same criteria to diverse businesses makes it hard to set performance expectations
- **Solution:** The QMA team has partnered with the Quality Roundtable to define the assessment criteria and enable like entities to work together to understand how best to implement Plan-Do-Check-Act
- **Lessons Learned:**
 - In a diverse, distributed business like Sandia's there is a fine balance between defining common expectations and allowing for a graded approach
 - We have to balance a common approach and consistent assessments across diverse businesses

WHERE DO WE GO FROM HERE?

Improving the quality of products and services

- The expected outcome of QMA is better understanding of how to implement Plan-Do-Check-Act to deliver high quality products and services
 - When entities have information on how to improve their work, they can improve their outcomes
 - Our partnerships will help us be a trusted resource for entities to execute improvements
- QMA will also identify strengths and areas for improvement across the corporation
 - We can articulate how effectively we manage business and technical processes to result in quality deliverables
 - The corporation cannot deliberately improve until we know what needs action and attention

When you know better, you do better

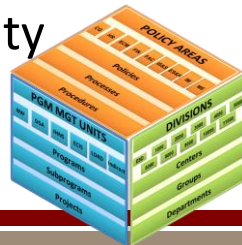
Summary

- Sandia and customer expectations created the need to assess (and improve) assurance and quality
- Maturity assessments have proven to be an effective way to monitor and improve performance
- Mentoring/coaching/partnering is a best practice
- Changing the scope of our project would have been easier if we had verified communication and understanding
- Taking time to understand the concerns of our partners slowed our schedule but should increase the fidelity of our assessment
- QMA results over the next three years will show how Sandia is improving the Quality of Products and Services through Partnering and Feedback

Backup slides

Details of the FY14 QMA Approach

- Partnered with Sandia Quality Roundtable to define Level 3 (Visible/Repeatable) maturity for each criterion of DOE O 414.1D
 - QRT is ensuring understanding across all entities at Labs
 - Defining common vocabulary, discussing appropriate evidence to demonstrate performance
 - Coaching/teaming/mentoring each other
- Chose 4 criteria of 414.1D for assessment in FY14:
 - #1 Program
 - #2 Training and Qualification
 - #9 Management Assessment
 - #10 Independent Assessment
- Scheduled Divisions and Program Management Units for assessment, one criterion at a time
- Policy Areas responsibilities and accountabilities for Quality are not well understood by implementers so we are taking more time to get clarity



The Future of QMA

- All 24 management entities have engaged with this process through influence
- We have begun our Quality Maturity Assessments
- The schedule is aggressive to make up for lost time but we are confident we can meet the schedule
- Our partnership with the Quality Roundtable is a valuable resource that couldn't work better if we'd designed it ourselves.