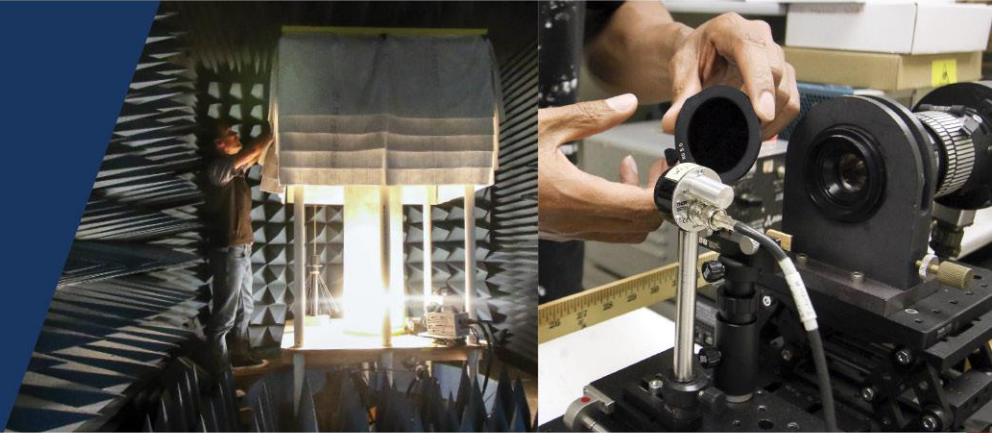




# Preparing for Implementation of Mobile Work Packages



**Jerel G. Nelson**

Manager, Work Planning & Control (WP&C)

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# Nevada National Security Site (NNSS)

- ▶ Nevada National Security Site is a National Nuclear Security Administration (NNSA) site that performs a national nuclear security mission for the United States
- ▶ NNSS covers over 1,300 square miles (about the size of the state of Rhode Island), has over 700 facilities, miles of utilities (power, water, sewer), and numerous different waste facilities
- ▶ NNSS is managed by Mission Support and Test Services (MSTS) which is a limited liability company consisting of Honeywell International Inc., Jacobs Engineering Group Inc., and HII Nuclear, Inc. of ~2,200 employees managing 9 different sites in New Mexico, California, New York, Washington D.C. and small offices in nine other states

# Challenge(s)

- ▶ Over 14,000 paper work packages generated annually taking significant resources to process and consuming over 690 reams of paper
- ▶ Work order data takes time to process and enter into the work management and computerized maintenance management system introducing delays and human error
- ▶ Facility and asset condition not being captured or trended to perform intelligent asset management and predictive maintenance
- ▶ Work order data not available in real-time, so performance reporting and decision-making is based on data that may be 2-4 weeks old or data may not be available
- ▶ Loss of completed work packages and an inefficient close-out process to review and enter the data takes significant resources and requires long-term storage of paper documents
  - Thousands of WPs being lost annually, significant resources required to process completed WPs for required archiving for government-required document archiving



# Challenge(s) Cont'd

- ▶ WP reviews and comment incorporation is taking a long time to perform and process due to number of reviews and paper process
  - Transportation time required to obtain ALWD reviews and approvals:
  - NNS is located 90 minutes from Las Vegas, NV and can take 30-40 minutes (one-way) to transport WPs to reviewers for signature
- ▶ Requires hard/wet signatures for each work package, permit, hazard analyses, and pre/post-job briefings
- ▶ Work plans, permits, and hundreds of company forms, owned by supporting and stakeholder organizations (Safety, Industrial Hygiene, RadCon, Engineering, etc.) also use a paper process
- ▶ Paper process has been used for over 65 years



# M4M Pilot Project Summary



- ▶ **Pilot Project Objective: Install, configure, and implement a mobile, automated, paperless work control solution with selected Work Planning & Control (WP&C) forms and perform pilot for Construction, Maintenance, and Site Services**
- ▶ Installed, configured, and tested Mobile for Maximo (M4M); M4M is now live in production
- ▶ Purchased, configured, and distributed 40 mobile units (Dell 2-in-1 laptop, case, strap, portable charger, stylus)
- ▶ Developed 32 mobile forms (WP&C (15), Safety & IH (3), Maintenance (2), Hoisting & Rigging (2), USQ (1), DAF (3), Environmental (1), and other (6))
- ▶ Trained (in person and virtual) select trainers, planners, planning supervisors, job supervisors/foreman (JS/F), craft, and mobile form developers (from each organization)
  - Developed 30 short, targeted video tutorials for all M4M functions (Maximo functions that support M4M)
- ▶ Performed field pilot and user acceptance testing (UAT) on multiple work packages:
  - Construction (2 WPs), Maintenance (4 WPs), Site Services (4 WPs)
  - Obtained user feedback and evaluated against project success criteria, which were achieved
- ▶ ***Successfully demonstrated that a work request could be generated and a work package (WP) planned, executed, and closed without generating a piece of paper***

# M4M Implementation Value & Benefits



- ▶ Provides real-time or end-of-day data updates for improved performance metrics, reporting, trending, decision-making, and maintenance strategies
- ▶ WP closure performed automatically once WP is completed
  - Eliminates the possibility of lost-missing WPs and labor required to process completed WPs – WPs can not be lost and archiving performed automatically in seconds
- ▶ Ability for WP reviews and approvals, form/permit completion and development, FM acceptance to be performed anywhere at anytime
  - Eliminates transportation time and delays for WPs and improves ability for JS/Fs and support personnel to complete reviews, approvals, and forms in the field
- ▶ Leverages use of existing and template job plans for frequently performed and to ensure required integrated work control process (IWCP) activities are performed in a standard, consistent, and high quality manner
- ▶ Provides custom views for JS/F, planners, FMs, support organizations, for work activities
- ▶ Reinforces a standard workflow and institutional work planning and control process end-to-end



# M4M Implementation Value & Benefits

- ▶ Implements accountability and data validation, and completeness checks for planning, execution, and closure reducing incompleteness and significantly improving quality
- ▶ Ensure work step completion and hold point sign-offs only by the authorized group and/or personnel
- ▶ Condition assessments are performed and failure codes recorded in real-time
- ▶ Enables capturing wrench time (actuals) to provide greater accuracy of resource/labor management and forecasting
- ▶ Reduces (virtually eliminates paper consumption (over 691 reams of paper per year)
- ▶ Estimated cost savings/avoidance of >\$10M annually
- ▶ Expected time/schedule savings (including work planning and work execution reduction is significant (thousands of days per year): >50% cycle time reduction of WP review and approval durations
- ▶ Opportunities exist for future integration with skills management, training verification, asset management, and hazard analysis



# Progress to-date



- ▶ Secured 3-years of investment funding
- ▶ Purchased additional Maximo and Mobile for Maximo (M4M) software licenses
- ▶ Purchased 290 of 400 mobile 2-in-1 laptops and accessories
- ▶ Converted ~800 of 3,500 Maximo job plans (JPs) to mobile JPs
- ▶ Converted 90 of 200 company forms to mobile forms
- ▶ Hiring 4 full-time resources (Two IT and Two WP&C)
- ▶ Revising procedures to allow for use of mobile forms and mobile WPs
- ▶ Providing M4M training to all users and develop additional training resources
- ▶ Working with support and stakeholder organizations (Safety, Industrial Hygiene, Radiological Control, Facility Management, Field Engineering, Design Engineering, Facility Engineering, and QA)



# Progress to-date



- ▶ Received MaximoWorld 2022 Award for Best Work Execution



# Path Forward



- ▶ Setup ~80 mobile sync locations throughout NLV and the NNSS
- ▶ Perform dry runs
- ▶ Complete conversion of job plans and mobile forms
- ▶ Provide additional M4M user training
- ▶ Complete identified configurations

# Implementation Schedule

- ▶ **January – March 2023:** NLV Maintenance and Balance of Plant (BOP) Construction
- ▶ **April – June 2023:** U1a Construction & Maintenance and Roads and Grounds
- ▶ **July - September 2023:** NNSS Maintenance and Waste & Water
- ▶ **October – December 2023:** Other nuclear and high-hazard facilities

# Future State



- ▶ Work is requested, work planned, work executed, and WPs closed electronically (start-to-finish)
- ▶ WP closure is performed automatically when work is completed
- ▶ Forms, permits, checklists are all completed electronically at any location
- ▶ Data is captured, reported, updated, and trended electronically in real-time
- ▶ Conditions assessment can be performed in the field
- ▶ Skills and training are verified in the field (STAR Integration)



*'Start by changing what people do rather than how they think.'*  
*John Schook*