

SAP-CENTRIC EAM 2010

Inspiring Individuals – Empowering Enterprises



SAP & SONGS

Growing and Learning with Work Clearance Management

Chuck Dube

SCE SONGS

Rory David Shaffer

SAP Labs LLC

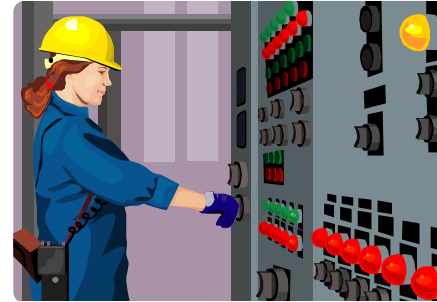
Agenda

- SAP Work Clearance Management
 - Product and Process Description
- Outage Duration Reduction
 - Tag Sharing
 - Mode Dependence
 - Line Ups
- SCE Lessons Learned
 - Project Planning
 - Go Live
 - WCM Tuning Project

What is Work Clearance Management



Work Clearance Management Process



**Work Clearance
Management**

Notification

**Create
Order**

**Plan
Order**

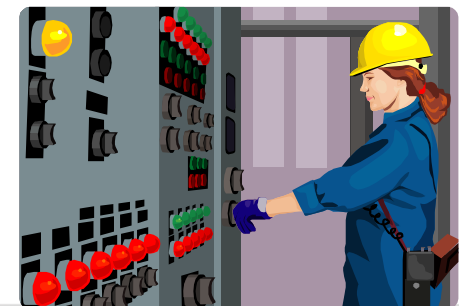
**Release
Order**

**Confirm
Order**

**Complete
Order**



**Work Clearance
Management**



SAP & Customers Working Together

- Since 1997, Listening to Business Requirements
- International Participants
- Hands On Approach
 - WCM Focus Group
 - ASUG Utility SIG
 - WCM Info Day



Outage Duration *Reduction*

- Tag Sharing
- Mode Dependence
- Line Ups
 - Vast Majority of Time is Spent
 - Hanging Duplicate Tags
 - Researching Plant Drawings
 - Performing System Alignments




Outage Duration *Reduction*

- Tag Sharing

Multiple Users of Tags Already Printed



 **Change Operational WCD: Header**

WC Document: 300000000205 Multi Tag 2 001

Status: PREP PROC UNT EUG

Valid from: 30.03.2003 00:00:00 Valid to: 29.03.2004 00:00:00

Priority: Recall Time: 0

Cond.Tech.Syst.

Revision Phase

Reference object

Funct. Location: C1 Clarification plant

Equipment

Train

Overview: Operational Tags No Longer Used

Counter	Tag	Test Tag
10	2	



Outage Duration *Reduction*

- Mode Dependence

Plant Condition + WCM Processes Working Together



Table View Edit Goto Selection Utilities System Help

List Edit Goto Environment System Help

Change Master Data for Mode-Dependent Tagging

Operational Conditions Operational Types

Planning Plant 1000
Operational Group E

Technical Object/Overall Condition Short Text OperCondtn Optn Type Created by Created on

ML01A	Pump Motor Type A	OFF	A	C5114682	14.12.2008
W1	Full Load	ON	A	C5114682	14.12.2008
W2	Partial Load	ON	A	C5114682	14.12.2008

Untagging condition of generic overall condition

Outage Duration *Reduction*

- Line Ups

The Process of Setting or Verifying Positions of Plant Equipment



Verification List Edit Goto System Help

Change Verification List 1

Short Text: Reference - LineupTemp 2504
 Status: PREP → *First verification list prepared → Confirmation possible*

Created by: C5114682 Created on: 13.02.2009
 Last Changed By: C5114682 Changed on: 13.02.2009

Check

Sort.	I.	Tech. Obj.	Exp. Op.	Exp. Op.	Cur. Op.	Cur. Op.	Confid. O.	Confid. DT	Remarks	Technical Note	OperCondtn	OperCondtn	Checked	Checked	Checke	Status	Processing
1	E	ML-1000-01	OPEN	A	OPEN	A				WVC Document 300000021400					00:00:00	Red	Flag
2	E	ML-1000-02	OPEN	A	OPEN	E				WVC Document 300000021400					00:00:00	Red	Flag
3	E	ML-1000-03	OPEN	A	OPEN	A					✓	✓			00:00:00	Green	Flag
4	E	ML-1000-04	OPEN	A	OPEN	A					✓	✓			00:00:00	Green	Flag
5	E	ML-1000-05	OPEN	B	OFF01	B				WVC Document 300000021501					00:00:00	Red	Flag
6	E	ML-1000-07	OPEN	A	FREE	A						✓			00:00:00	Yellow	Flag
7	E	ML-1000-06	OPEN	A	OPEN	A					✓	✓			00:00:00	Green	Flag
8	E	ML-1000-05	OPEN	A	CLOSED	A						✓			00:00:00	Yellow	Flag

Expected operational conditions (as per system) → Current operational conditions (as per system)

Traffic lights for visualizing check status:
 green → current = expected operational condition
 yellow → current ≠ expected operational condition
 red → Object part of active lockout/tagout

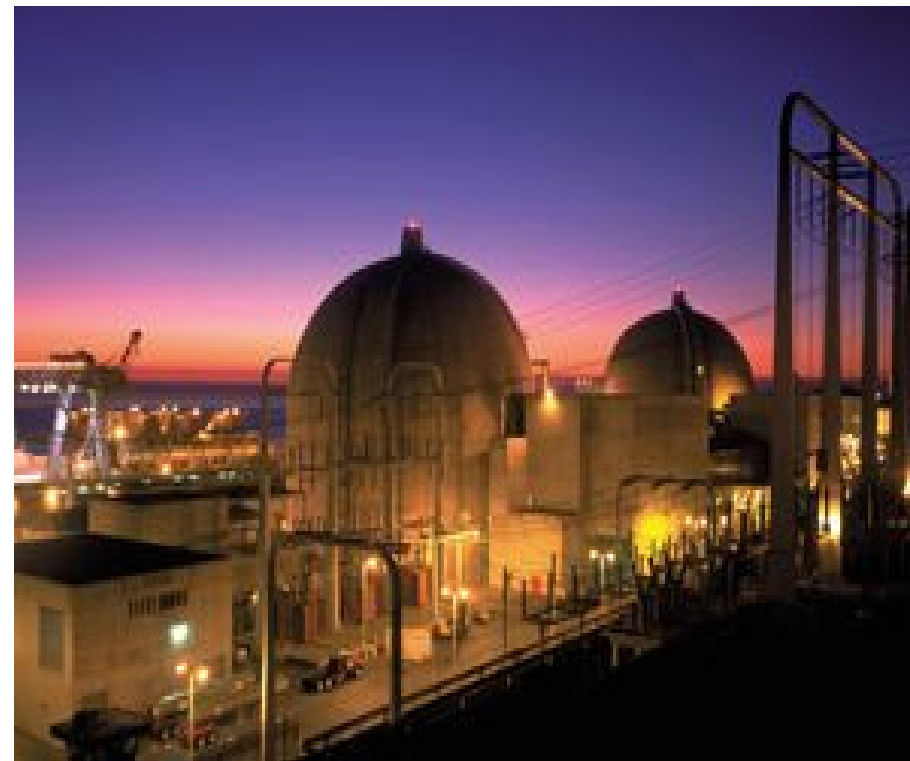
Outage Duration *Reduction*

- Tag Sharing
- Mode Dependence
- Line Ups
 - Vast Majority of Time is Spent
 - Hanging Duplicate Tags
 - Researching Return to Service Positions
 - Performing System Alignments



Agenda

- SAP Work Clearance Management
 - Product and Process Description
- Outage Duration Reduction
 - Tag Sharing
 - Mode Dependence
 - Line Ups
- SCE Lessons Learned
 - Project Planning
 - Go Live
 - WCM Tuning Project

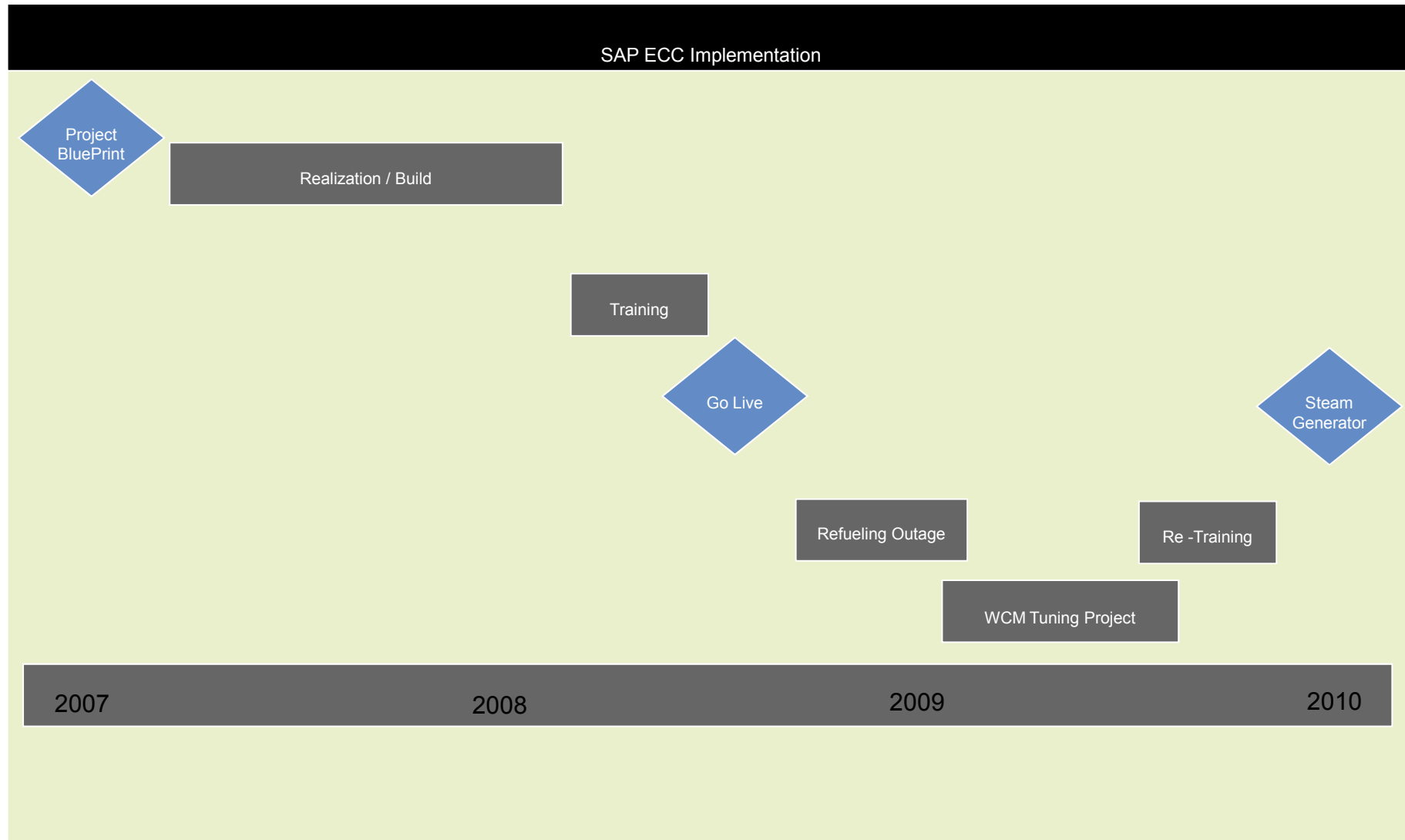




- The SCE service territory is a 50,000 square mile area of central, coastal and southern California that includes approximately 430 cities and communities with a total customer base of approximately 4.8 million accounts.
- SCE generates approximately 36% of the electricity it provides to customers, with an owned generation capacity of approximately 5,113 megawatts (MW).



SCE SONGS SAP Project Timeline



SAP WCM Implementation

- Enhancements
 - Standard w/ Enhancements Used for
 - OSHA Sign On / Group Tagging
 - Shared Tagging
 - Special Reports
 - Forms
 - Client Business Rules

SAP WCM Implementation Standard w/ Enhancements Used for

Special Reports

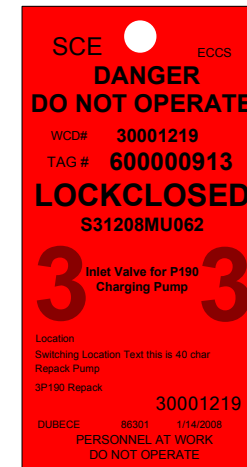
- **Maintain Safety and Schedule**
 - Predictive Tagging Conflict Report
 - Equipment Unavailable for Isolation Use
 - Clearances Ready for Release/Pickup
 - SignOn Report
 - Equipment Available to be worked

SAP WCM Implementation Standard w/ Enhancements Used for

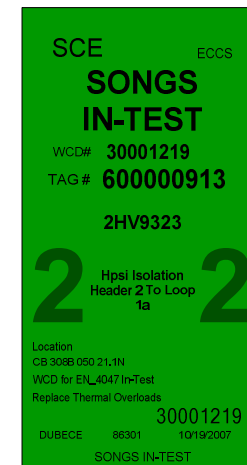
Forms

Provide Work Instructions

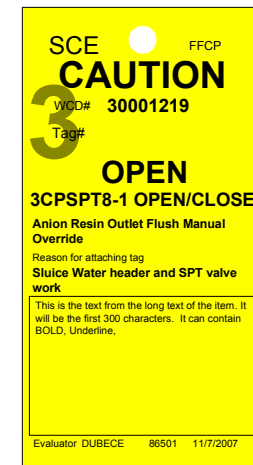
- *Tagging / Untagging Worksheets*
 - » *Tags to be Hung / Picked Up*
 - » *Shared Tags*
- *Walkdown Worksheets*
 - » *Supervisors View of Protection*
- *Tags for Isolations*
 - » *Danger*
 - » *Caution*
 - » *In Test*



SCE ECCS
**DANGER
DO NOT OPERATE**
WCD# 30001219
TAG # 600000913
LOCKCLOSED
S31208MU062
3 Inlet Valve for P190 Charging Pump 3
Location
Switching Location Text this is 40 char
Repack Pump
3P190 Repack
30001219
DUBECE 86301 1/14/2008
PERSONNEL AT WORK
DO NOT OPERATE



SCE ECCS
**SONGS
IN-TEST**
WCD# 30001219
TAG # 600000913
2HV9323
2 Hpsi Isolation Header 2 To Loop 1a 2
Location
CB 308B 050 21;1N
WCD for ENL4047 In-Test
Replace Thermal Overloads
30001219
DUBECE 86301 10/19/2007
SONGS IN-TEST



SCE FFCP
CAUTION
WCD# 30001219
Tag#
OPEN
3CPSPT8-1 OPEN/CLOSE
Anion Resin Outlet Flush Manual
Override
Reason for attaching tag
Sluice Water header and SPT valve
work
This is the text from the long text of the item. It
will be the first 300 characters. It can contain
BOLD, Underline.
Evaluator DUBECE 86501 11/7/2007

SAP WCM Implementation Lessons Learned

SAP is a Journey, Not an Event

- **Project**
 - ***All Parties Must Contribute***
 - ***Commitment***
 - ***Knowledge***
 - ***Experience***
 - ***Organizational Change is the HARD PART !***
- **Training**
 - ***Classroom Process Based Training***
 - ***Basic Skills***
 - ***Navigation***
 - ***Terminology***
 - ***User Responsibilities***

SAP WCM Implementation Lessons Learned

- *Initial Go-Live Training (No SAP Experience at all)***
 - *Operations and Work Control***
 - *12 Hours Lecture and Hands-on***
 - *On Overtime***
 - *This training included Time Cards***
 - *Operations Super Users (1 per Crew)***
 - *32 hours Lecture and Hands-On***
 - *Maintenance***
 - *1 hour Lecture only, in large groups***

SAP WCM Implementation Lessons Learned

- *Re-Start Training (After 10 months SAP experience)***
 - *Operation and Work Control***
 - *12 Hours Lecture, Demonstration and Hands-On***
 - *Maintenance Craft –***
 - *4 Hours Lecture, Demonstration and Hands-On***
 - *Maintenance Supervision –***
 - *8 Hours Lecture, Demonstration and Hands-On***
 - *Day in the life Workshops***
 - *4 hours Hands-On***

SAP WCM Tuning Project Readiness Assessment

Survey Question	“Yes”
I am aware that Shared Tagging is returning to SONGS in June	100%
I have attended meetings outlining changes made since Shared Tagging was released in July, 2008	86%
My Supervisor has talked to my work group about the return to Shared Tagging in a positive manner	73%
I have attended all training available to me on Shared Tagging	93%
I understand my role in the Work Clearance process and how it protects me and others	97%
I trust that the SAP system and Work Clearance process will protect my safety and the safety of others	75%
Are you ready to perform your job as it relates to Shared Tagging? “Yes”	79%
Are you ready to perform your job as it relates to Shared Tagging? “Yes, with Exception”	17%
Are you ready to perform your job as it relates to Shared Tagging? “No”	4%

SAP WCM Tuning Project Lessons Learned

To address those who are “Not Ready” or are “Ready with Exception”:

- Provided “conversation starters” and supporting material to Managers and Supervisors in Maintenance, Operations and Work Control with instructions on use with individual work groups
- Scheduled classes on Shared Tagging throughout the Summer to allow those who feel they need more training to participate and to include those who could not attend initial training.
- Scheduled 9 more “Day in the Life” sessions to walk through the entire process with Operations, Work Control, Maintenance Supervisors and Maintenance Craft personnel participating

SAP WCM Tuning Project Lessons Learned

– *Final Survey Results*

- ***My 2009 Safety Tagging Training Was effective***
 - ***86.6% agree***
- ***I understand my role in Safety Tagging***
 - ***95.2% agree***
- ***I understand how safety Tagging protects me and others***
 - ***95.2% agree***

SAP WCM Implementation Lessons Learned

SAP is a Journey, Not an Event

- **Project**
 - ***All Parties Must Contribute***
 - ***Commitment***
 - ***Knowledge***
 - ***Experience***
 - ***Organizational Change is the HARD PART !***
- **Training**
 - ***Classroom Process Based Training***
 - ***Basic Skills***
 - ***Navigation***
 - ***Terminology***
 - ***User Responsibilities***

SAP-CENTRIC EAM 2010

Inspiring Individuals – Empowering Enterprises



Chuck Dube

SCE SONGS

Chuck.Dube@SCE.COM

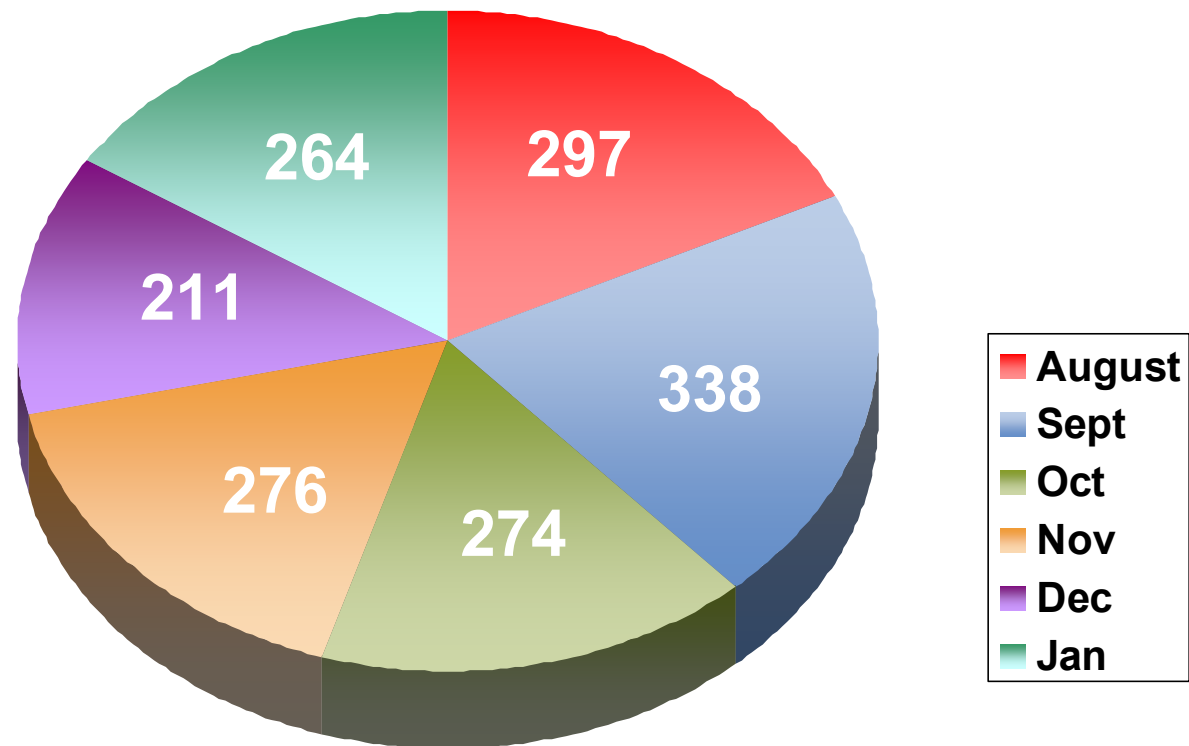
Rory David Shaffer

SAP Labs LLC

Rory.Shaffer@SAP.COM

Operational WCDs

WCDs per Month



Safety Tagging

Number of Tags

Red Tags
TBA

Magnetic Tags
TBA

Caution Tags
TBA

In-Test Tags
TBA