



SAP & SONGS

Growing and Learning with Work Clearance Management

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SCE SONGS

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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

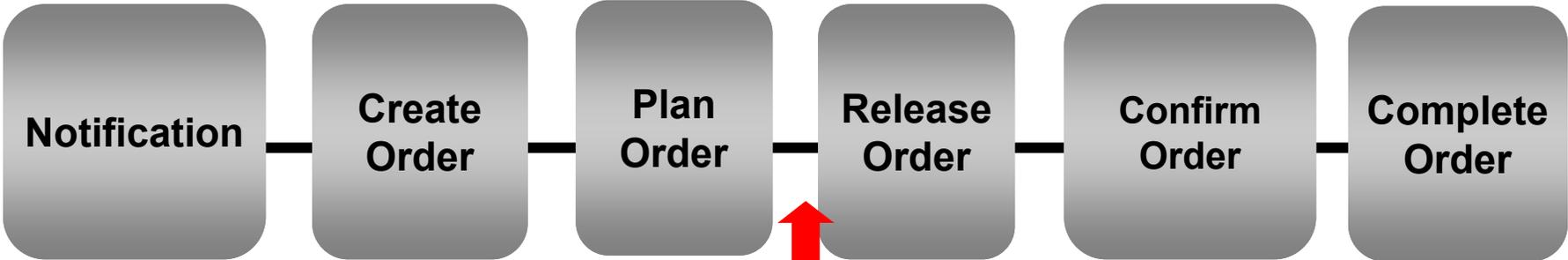
What is Work Clearance Management



Work Clearance Management Process



Work Clearance Management



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

Untagging condition of generic overall condition

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

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

OperCondtn Expected Operational Condition

Check

Sort	T	Tech. Obj.	Exp. Op.	Exp. Op.	Cur. Op.C	Cur. Do.	Confid. C.	Confid. DT	Remarks	Technical Note	OperCondtn	OperCondtn	Checked	Checked	Checke	Status	Processing
1	E	ML-1000-01	OPEN	A	OPEN	A				WC Document 300000021400					00:00:00	Red	Flag
2	E	ML-1000-02	OPEN	A	OPEN	A				WC 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-1000-08	OPEN	B	OFF01	B				WC 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 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*

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 - Vast Majority of Time is Spent
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 - Researching Return to Service Positions
 - Performing System Alignments



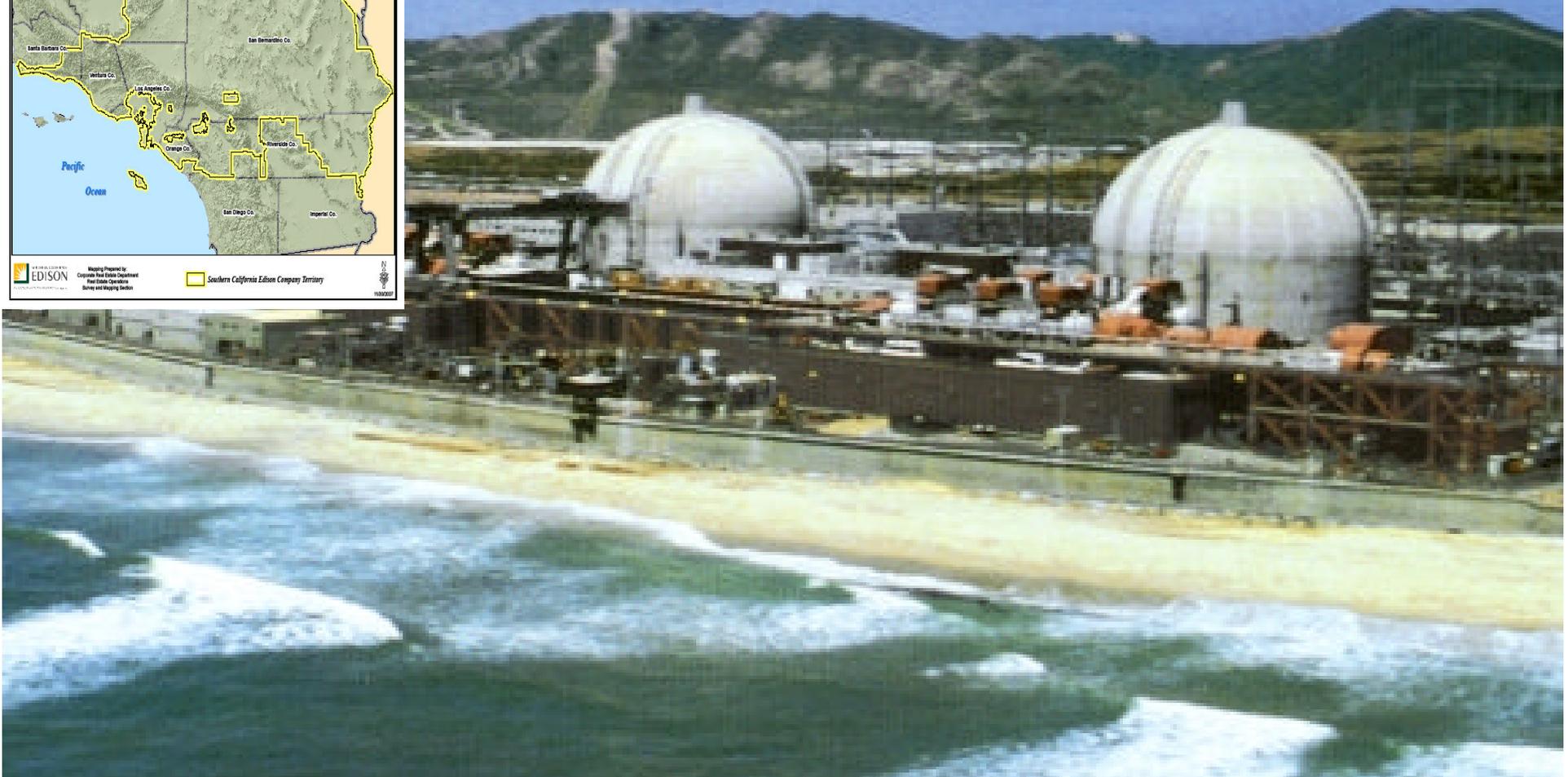
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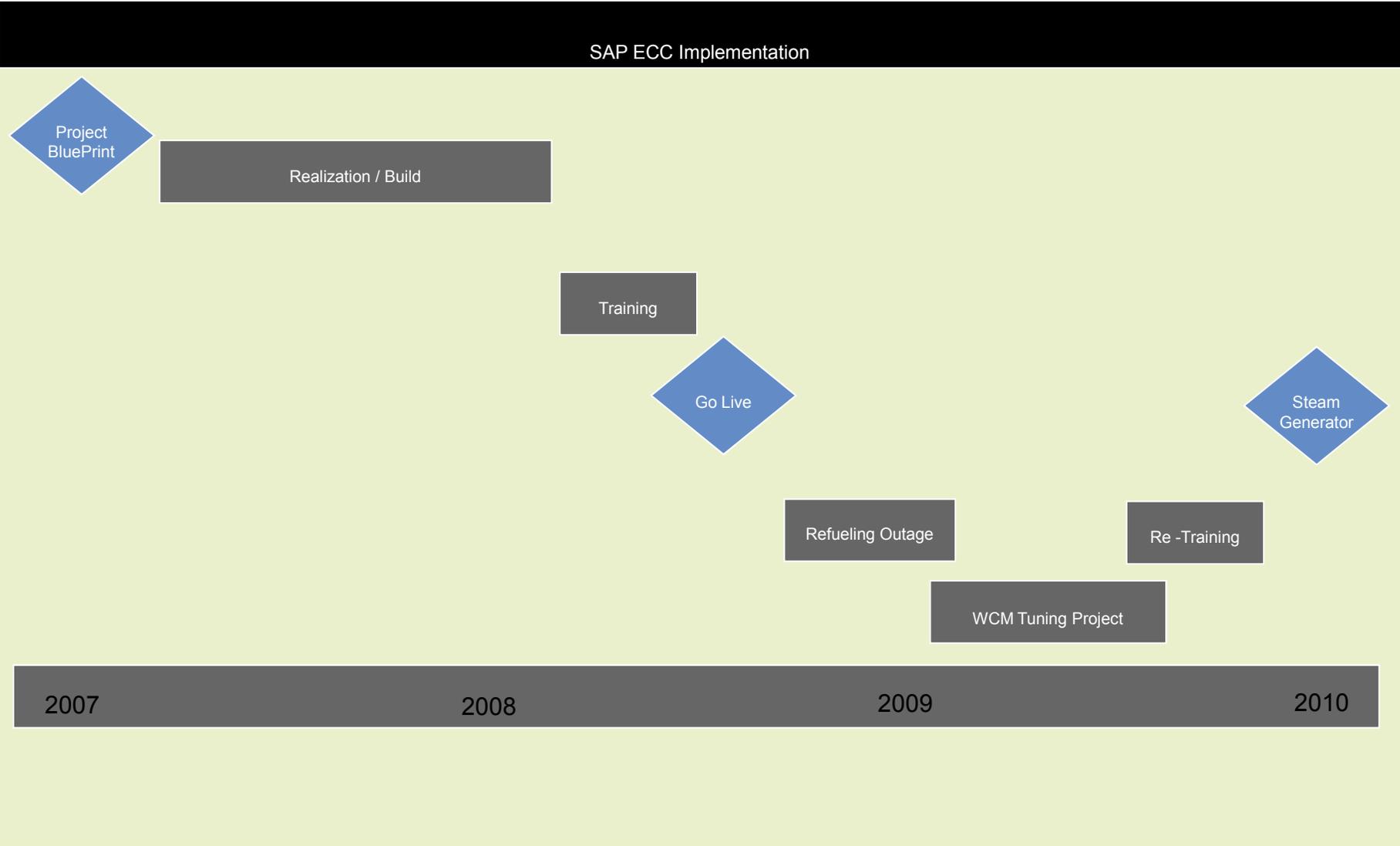




- The SCE service territory is a 50,000 square mile area of central, coastal and southern California that includes approximately 430 cities and communities with a total customer base of approximately 4.8 million accounts.
- SCE generates approximately 36% of the electricity it provides to customers,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

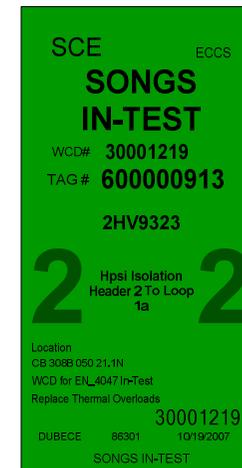
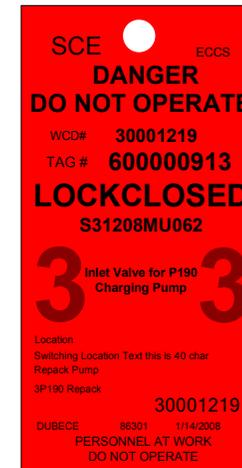
- Maintain Safety and Schedule
 - Predictive Tagging Conflict Report
 - Equipment Unavailable for Isolation Use
 - Clearances Ready for Release/Pickup
 - SignOn Report
 - Equipment Available to be worked

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*



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*

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SAP-CENTRIC EAM 2010

Inspiring Individuals – Empowering Enterprises



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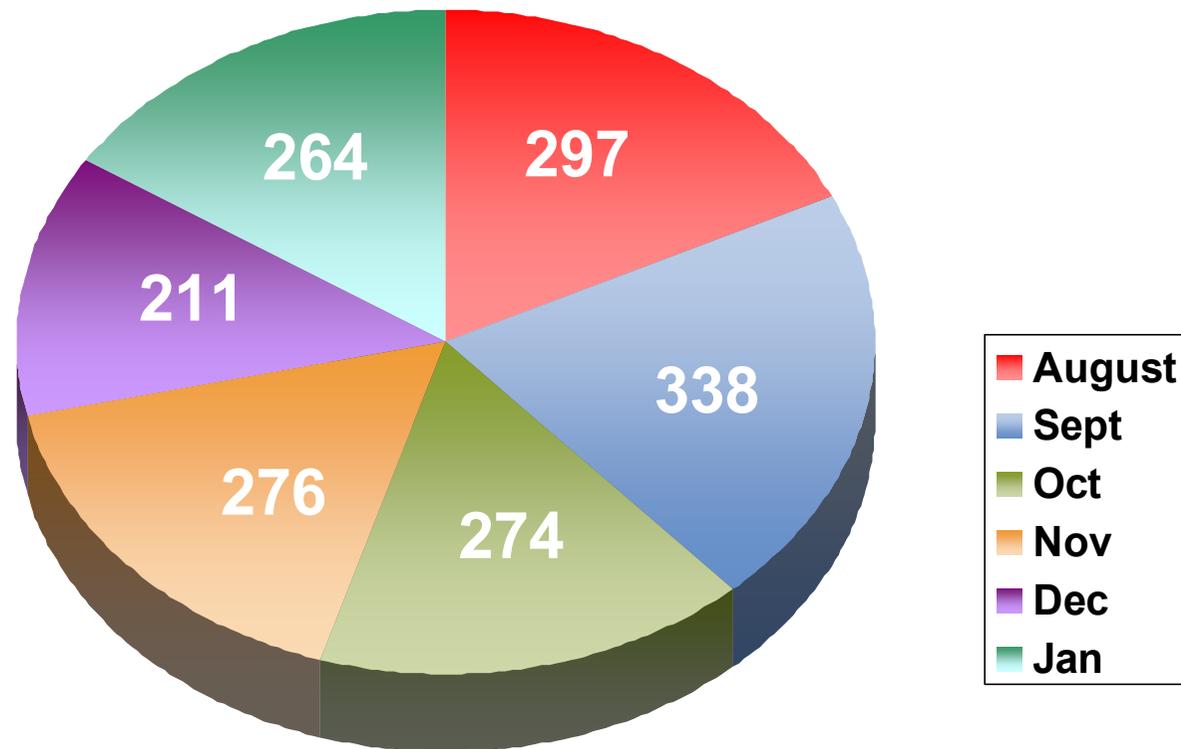
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Operational WCDs

WCDs per Month



Safety Tagging

Number of Tags

