How to Modernize and Improve Safety Practices with Technology
A Case Study of Dairyland Power Coop

By: Eli Holman and Kim Helgerson
Agenda

• History of Safety Practices at DPC
• Safety Survey
• Continuous Improvement Team #2
• Let’s Use Technology
• IT Partnership with Safety Department
• Existing Challenges
• Objectives of Safety Management System
• Design, Configuration, Deployment of Solution
• Results
History of Safety Practices

1990

OSHA Recordables and Lost Time Incidents

1992

Minor Injury, Near Miss, and Property Damage

1997

PC Compliance and Access Database
Continued History of Safety to Now

• Creating a Culture of Trust
  • Active Participation by EVERYONE
  • Positive Communication of Lessons Learned

• Future Lands in the Hands of the Employees
  • Employees have all the Knowledge we Need
  • Timely & Appropriate Resolution of Safety Concerns

• Caterpillar Safety Services
  • Business Partnership
  • Survey Launch
Outcome of Safety Survey

• Results of the Survey Analysis
  • Safety Steering Team – Oversee
  • Continuous Improvement (CI) Teams – Tactical Front Line Teams

• Found different categories of safety
  • Near Miss
  • Hazard Recognition
  • Injury/Illness
  • Property Damage
  • Vehicle Damage
Continuous Improvement Teams

• Continuous Improvement (CI) Teams are formed by the Safety Steering Team to Address an Assigned Issue

• The Teams Consist of your Peers and are NOT Management Developed

• 100% Management Support with the CI team Recommendations
CI Team #2

- Coal Handling
- Operations
- Veg Mgmt.
- SOC (Sys. Ops Center)
- Transmission Maintenance
- GSS (Gen. Ops Support)
- Electrical Maintenance
CI Team #2 Mission

To foster a "Just Culture" which promotes trust and supports learning from unsafe conditions - which avoids fear of retribution and blame, thereby encouraging the flow of safety information to prevent future incidents.
CI Team #2 Process Improvement

Observer
- Observer corrects unsafe situation immediately
- Observer reports near miss

Turn into foreperson/supervisor or electronically
- Foreperson reviews and corrects or initiates follow up
  - Corrected
  - Not Corrected

Foreperson communicates near miss to manager

Observer will be given personal feedback from safety committee member

Anonymous observer is encouraged to monitor process through completion (control #)

Safety acts as observer and determines the process step

Manager informs all other foreperson/involved parties to share near miss

Sends near miss card to safety manager

Safety committees responsible for company communications

Safety compiles data to be sent out to safety committees

Safety reports, trends, feedback, and positive recognition

VP’s/CEO, Steering committee

Safety investigates and determines severity and monitors corrective action
Let’s Use Technology

- Near Miss Forms
  - A Near Miss is Only as Good as the Learning
  - Recognized the Need for Technology

- Data Driven
  - Use the Data to Help with Making Proactive Decisions
  - Discussions for Preventing Injuries.

- Technology Focused Partnership with Safety
  - Efficient, Simple, and Sharing of Information.
Ready to Partner!
IT Business Partnership with Safety Department

• IT Plugged In at the Beginning
• Side by Side Partnership
• Helping Safety to Self Select Wisely
Existing Challenges

• Paper Process
Existing Challenges

- Paper Process
- Manual Approval Process
Existing Challenges

- Paper Process
- Manual Approval Process
- Multiple Systems and Redundant Data Entry
Existing Challenges

- Paper Process
- Manual Approval Process
- Multiple Systems and Redundant Data Entry
- Lack of Useful Reporting and Limited Transparency
Objectives of Safety System

- Centralized Data
- Simplify Reporting of Safety Incidents
- Increase Transparency
- Automate Approval Process
- Increase Availability
Intelex Implementation Methodology

**KICKOFF & PLANNING**
- Mobilization
- Intelex Sales to Services Transfer
- Project Kick-Off

**DESIGN**
- Requirements Gathering
- Design Workshop

**CONFIGURE**
- Application Configuration
- System Integration & Imports

**TEST**
- Client System Integration
- Client Testing

**TRAIN & DEPLOY**
- Training
- Production Site Readiness
- Go Live
Solution Design - Approach

• Approach
  • Established Core Business Stakeholders
Solution Design - Approach

• Approach
  • Established Core Stakeholders
  • Design Workshop
# Solution Design - Result

## Application Configuration Workbook

**EHS Incident Management (2.2.1)**

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Prepared By</th>
<th>Changed in this Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>2-Dec-16</td>
<td>Terence Chan</td>
<td>Initial version based on Onsite Workshop</td>
</tr>
<tr>
<td>1.1</td>
<td>11-Jan-17</td>
<td>Terence Chan</td>
<td>Added Vehicle incident Design</td>
</tr>
<tr>
<td>1.2</td>
<td>12-Jan-17</td>
<td>Terence Chan</td>
<td>Updates to workflows and addition of immediate Supervisor field</td>
</tr>
<tr>
<td>1.3</td>
<td>1-Feb-17</td>
<td>Terence Chan</td>
<td>Updates to workflow validations and field attributes as part of prototyping QA</td>
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<tr>
<td>1.4</td>
<td>21-Feb-17</td>
<td>Terence Chan</td>
<td>Updates to fields and workflows after DPC final design review</td>
</tr>
<tr>
<td>1.5</td>
<td>8-Mar-17</td>
<td>Terence Chan</td>
<td>Minor tweaks to the Workflow comments to account for config requirements, and adjusting HR group Security permission for the OSHA form</td>
</tr>
<tr>
<td>1.6</td>
<td>25-Mar-17</td>
<td>Terence Chan</td>
<td>Minor updates to fields based on QA testing, and update to lookup list values from DPC</td>
</tr>
<tr>
<td>1.7</td>
<td>17-Apr-17</td>
<td>Terence Chan</td>
<td>Minor updates per UAT</td>
</tr>
</tbody>
</table>

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9. Action Handlers
10. Application Tabs
11. Security
Solution Design - Result
## Solution Design - Result

### Property Damage Incident

<table>
<thead>
<tr>
<th>#</th>
<th>Stage</th>
<th>Field Name</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory</th>
<th>Add / Remove</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Draft</td>
<td>Record No.</td>
<td>Auto Number</td>
<td>Auto Number</td>
<td>Y</td>
<td>Y</td>
<td>Relationship M:1 to Location object</td>
</tr>
<tr>
<td>2</td>
<td>Draft</td>
<td>Location</td>
<td>Relations</td>
<td>Relations</td>
<td>Y</td>
<td>N</td>
<td>Relationship M:1 to Location object</td>
</tr>
<tr>
<td>3</td>
<td>Draft</td>
<td>Cost Center</td>
<td>Indicates Cost Center of the record</td>
<td>Text</td>
<td>Y</td>
<td>Y</td>
<td>A Default Value: Cost Center from employee involved in the Property Damage</td>
</tr>
<tr>
<td></td>
<td>Draft</td>
<td></td>
<td>Hide on Create</td>
<td></td>
<td></td>
<td></td>
<td>Tooltip: Provide further details about the incident occurred i.e. near stairwell, warehouse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Coordinates etc.</td>
<td></td>
<td></td>
<td></td>
<td>Hint Text: &quot;Describe the place that incident occurred.&quot;</td>
</tr>
<tr>
<td>4</td>
<td>Draft</td>
<td>Date and Time of Incident</td>
<td>Date and Time</td>
<td>Date and Time</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Draft</td>
<td>Incident Description</td>
<td>Text</td>
<td>Text</td>
<td>Y</td>
<td>N</td>
<td>Hint Text: &quot;Describe the incident including machines/equipment involved, and extent of damage.&quot;</td>
</tr>
<tr>
<td>6</td>
<td>Draft</td>
<td>Employee Involved in the Property Damage</td>
<td>Select the employee involved in the property damage</td>
<td>Relations</td>
<td>Y</td>
<td>N</td>
<td>A Relationship: M:1 to Employee Object</td>
</tr>
<tr>
<td>7</td>
<td>Draft</td>
<td>Initial Severity</td>
<td>Low/Medium/High</td>
<td>Low/Medium/High</td>
<td>Relations</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>8</td>
<td>Draft</td>
<td>Suspected Cause</td>
<td>Text</td>
<td>Text</td>
<td>Y</td>
<td>N</td>
<td>R</td>
</tr>
<tr>
<td>9</td>
<td>Draft</td>
<td>Immediate Actions Taken</td>
<td></td>
<td>Text</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Draft</td>
<td>Reported By</td>
<td>Relations</td>
<td>Relations</td>
<td>Y</td>
<td>N</td>
<td>Relationship: M:1 to Employee Object</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Default Value: CURRENT USER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Draft</td>
<td>Date and Time Reported</td>
<td>Date and Time</td>
<td>Date and Time</td>
<td>Y</td>
<td>N</td>
<td>Default Value: NOW</td>
</tr>
<tr>
<td>12</td>
<td>Draft</td>
<td>Assigned Foreperson/Supervisor (Who you report to)</td>
<td>Select the supervisor from the employee list</td>
<td>Relations</td>
<td>Y</td>
<td>N</td>
<td>A Relationship: M:1 to Employee Object</td>
</tr>
<tr>
<td>13</td>
<td>Verification</td>
<td>Damage Type</td>
<td>Lookup (Single)</td>
<td>Lookup (Single)</td>
<td>Y</td>
<td>N</td>
<td>Lookup L14</td>
</tr>
<tr>
<td>14</td>
<td>Verification</td>
<td>Damaged Items</td>
<td>Text</td>
<td>Text</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Verification</td>
<td>Damage Description</td>
<td>Text</td>
<td>Text</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Verification</td>
<td>Property Owner</td>
<td>Lookup (Single)</td>
<td>Lookup (Single)</td>
<td>Y</td>
<td>N</td>
<td>Lookup L15</td>
</tr>
<tr>
<td>17</td>
<td>Verification</td>
<td>Owner Name</td>
<td>Text</td>
<td>Text</td>
<td>Y</td>
<td>N</td>
<td>View Action: Only show if ‘Owner’ is equal to “Third Party”</td>
</tr>
<tr>
<td>18</td>
<td>Verification</td>
<td>Owner Address</td>
<td>Text</td>
<td>Text</td>
<td>Y</td>
<td>R</td>
<td>View Action: Only show if ‘Owner’ is equal to “Third Party”</td>
</tr>
<tr>
<td>19</td>
<td>Verification</td>
<td>Will Investigation Be Required?</td>
<td>Verif. No</td>
<td>Verif. No</td>
<td>Y</td>
<td>N</td>
<td>View Action: Displayed if “Will Investigation Be Required?” is equal to “Yes”</td>
</tr>
</tbody>
</table>
Solution Configuration

• Approach
  • Vendor Implemented Configuration Using Design Workbook
  • DPC Consolidated and Mapped Historical Data in Preparation for Data Migration

• Result
  • Fully Configured Solution Matching the Agreed Upon Design
Data Migration

• Approach
  • Map Legacy Data
  • Consolidate Data
  • Transform Data
  • Utilize Import Templates

• Result
  • Excel File with All Historical Data
Change Management

- Communication Throughout Project
- Train the Trainer conducted by Intelex
- IT partnered with Safety to develop training material
- Safety conducted required training to all DPC staff
- Small group established for Pilot release
- IT developed user guides
Challenges and Lessons Learned

• Challenges:
  • Core Business Stakeholder Availability
  • Lost Primary Intelex Consultant
  • Changing business processes based on best practices

• Lessons Learned:
  • Better communicate commitments required by business stakeholders
Results

Days Since Last Recordable Incident: 57
Days Since Last Lost Time Incident: 131
Days Since Last Property Damage Incident: 15
Days Since Last Vehicle Incident: 1

DPC Recordable Incident Rate, Dart Rate, Lost Time Rate

Near Miss Incidents - 2018

Cost Center

Search...
### Results

<table>
<thead>
<tr>
<th>Incident No.</th>
<th>Incident Description</th>
<th>Incident Type</th>
<th>Location</th>
<th>Date of Incident</th>
<th>Status</th>
<th>Person Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>2667</td>
<td>Our fire escape plan specifies that our department should be using the first floor exit in the stairwell on the south west side of the building to exit in case of a fire. I have noticed that the path we are suppose to use once outside, specifically: the utility road up the hill on the south west side of the building has not been plowed and remains snow covered. I'm afraid in the event of a fire drill, this could be a potential safety hazard that could result in slips and falls while employees are using this to walk to their designated escape location.</td>
<td>Near Miss / Hazard Recognition</td>
<td>Zone None</td>
<td>Wednesday, December 21, 2016 12:00:00 PM</td>
<td>Closed</td>
<td></td>
</tr>
<tr>
<td>2665</td>
<td>TV mount in Conf 1-5 does not seem to be safely holding the TV.</td>
<td>Near Miss / Hazard Recognition</td>
<td>Le Crosse Admin Building</td>
<td>Thursday, February 8, 2017 8:43:00 AM</td>
<td>Closed</td>
<td></td>
</tr>
</tbody>
</table>
Results
Results

Near Miss No. 2834

Workflow Stage: Safety Manager Review  Workflow Status: Safety Manager Review  Person Responsible: Safety Manager (Role)  Due Date: Saturday, October 27, 2018

Draft  Review Details  Manager Review  Safety Manager Review  Closed

Near Miss Details

Foreperson/Supervisor Review Details

Manager Review Details

Safety Manager Review Details

Category

Potential Severity

Is Other Follow-Up Action Required?
Results
Demo
Key Takeaways

• Business Must Drive Solution
• IT Business Partnership helps to recommend best solution
• Solution Must Be Intuitive, Accessible, and Transparent
• Data needs to be centralized and readily available to facilitate business decisions
Comments and Questions