Spanning a territory of over 50,000 square miles, Southern California Edison (SCE) owns the distinction of being one of the single largest utility companies in the United States. Its 90,401 miles of distribution lines and 1.5 million utility poles bring power to nearly 15 million people and 285,000 businesses across Southern California, from Mono County to Orange County.

SCE faces many of the same challenges confronted by any large company seeking to effectively improve and streamline environment, health and safety (EHS) performance. SCE does stand out from the pack in terms of its aggressive EHS staffing and presence. The company employs more than 150 full-time, dedicated EHS professionals who are focused on governance, project management, compliance management, and field activities, representing a notable commitment to environmental, health, and safety stewardship.

But staffing is only a part of the picture, and the company recognized it still needed to improve alignment of people, processes, and technology to achieve excellence in EHS performance. In this case study we will review the challenges SCE faced in improving its EHS capabilities, the solutions it assessed and eventually chose in order to achieve best-in-class EHS performance, and the results from those decisions.

Implementing an Effective EHS Management System

SCE wanted to implement a robust EHS management system that would enable the company to minimize incidents and injuries, mitigate environmental impacts, and improve bottom-line performance. In its long-term quest to implement the right EHS compliance management solution, SCE encountered some bumps in the road. Starting with a home-grown compliance management system and then implementing two other solutions enable SCE to refine and streamline processes and better define business requirements.

When Terri Roberts, now Corporate EHS Compliance Principal Manager at SCE, arrived at the organization in 2004 to lead a companywide EHS compliance program, she initially faced the hurdle of discovering the deficiencies of a homegrown system. The company decided to extend an existing Asset Performance Management (APM) system to cover EHS compliance needs, but she was convinced it could not be utilized to effectively
address EHS compliance management. So, under her leadership, SCE decided to embark on finding the right EHS management solution.

**Overcoming Compliance Challenges**

But before this, consider the key challenges that were driving the utility provider to find the right EHS solution provider in the first place.

- **Disparate Processes**: The company faced an array of multiple disparate processes that were neither automated nor scalable. In other words, they were not able to provide stakeholders with the functionality they felt they ought to be able to provide.

- **Incident Management**: Between managing safety incidents (near misses and injuries), environmental incidents (hazardous material spills, agency visits, environmental events), and even utility-specific requirements such as switching and wiring events, SCE needed a robust solution to streamline the vast array of potential incidents they might encounter.

- **Environmental Compliance**: Facing the need to manage requirements for more than 60 different EHS compliance areas at the federal, state and local level across regulatory agencies such as the EPA and CAL-OSHA, the company needed to ensure it was able to track all compliance requirements and complete associated tasks on time, or else face potential regulatory fines and penalties.

- **Environmental Clearance**: As with any utilities provider, SCE needed to complete transmission and distribution projects in the field. As a result, they need environmental approvals from corporate EHS staff before they can put frontline staff on the ground and before they replace utility poles. This is required in order to ensure the company avoids any potential impacts on the environment. These include impacts ranging from negative effects on endangered species, to archeological sites, to runoffs in waterways. Before any streamlined process was introduced, the company relied on a series of manual processes, often involving emailing documents back and forth with the corporate EHS department.

- **Hazardous Waste Management**: Prior to the implementation of a streamlined system, SCE relied on a vendor to track which hazardous materials were being generated or how they were being disposed. The company needed a system that enabled it to track hazardous materials information and also relay information to stakeholders in an expeditious manner.

- **Reporting**: The utility provider also faced a series of disparate, redundant systems that were used to report on EHS performance and compliance requirements. As a result the company was not able to provide regulators...
and other stakeholders with the correct information at the right time.

These key challenges influenced the system business requirements at SCE as it endeavored to achieve a streamlined system to better manage EHS requirements.

“When I first came in we had a homegrown tracking system that was not sophisticated, and it was not meeting our needs,” explains Roberts, “While we could have attempted to improve it, we felt it would take a lot of resources and still would not achieve what we needed. The system couldn’t even accomplish basic permit tracking.”

**The Value of a Thorough Solution Selection Process**

In 2007, under Roberts’ leadership, the company began a rigorous solution selection process that began with looking at no less than 34 separate vendors in the EHS management space. As an SAP-oriented organization, SCE included SAP among the many vendors it evaluated, and in any other circumstance the company would have preferred to implement an SAP-based solution.

“Our unofficial policy was that if an SAP solution was available, we would have gone with that, since many of our existing systems were SAP-based,” says Douglas Ciolli, IT Project Manager for SCE.

However, upon evaluating the SAP offering at the time, the SCE team felt it was not quite at the maturity level they needed to manage their EHS requirements. As a result, they proceeded with the solution evaluation process and eventually selected the best fit solution available at that time establishing a contract with a vendor that extended from 2009 to 2014.

The chosen system was capable of managing many basic EHS activities for the utilities provider—such as permit and task management, emissions calculations, regulatory citation referencing, compliance reporting, and document management. Over time, however, SCE realized it was not suitably incorporated into other essential work activities and other solutions were maturing in the marketplace.

“Some of the system limitations were lack of integration with other areas of corporate activity, such as human resources, financial management, and work management,” explains Roberts. “It was a separate system, and the constraints with the lack of integration began to become more apparent.” In addition, there were increased EHS compliance areas to be tracked and a focus on minimizing the total cost of ownership of EHS systems.

Another business driver was to select a system that would operationalize and synchronize EHS requirements with the business.

In 2013 when the contract with the initial vendor was close to expiration, SCE began the process of evaluating other vendors. Fortunately, the information learned through a rigorous selection process initiated previously, SCE’s cross-functional EHS and IT teams were prepared for a smooth and efficient vendor evaluation process.

SCE learned what some companies that go through multiple system implementations learn: sometimes it is worth re-evaluating vendors previously dismissed. Though SCE decided to pass over SAP’s EHS management solution in 2008, they were sufficiently convinced to do due diligence and take another look in 2013. What they learned is that SAP seemed to
have identified the deficiencies in their offering when SCE first evaluated the solution and, in the intervening years, invested the resources into getting it right.

“When we re-evaluated SAP’s solution, it was clear they had made a serious commitment to making it work,” notes Roberts. “For us, we have SAP solutions rolled out in so many other areas of the organization that if SAP has a working solution for a particular program, that will always be our preference. When we saw the improvements made to SAP’s EHS offering in terms of functionality, process integration and usability; it became the obvious choice for our new implementation.”

Emboldened by the perceived strength of the new SAP offering, SCE decided to implement four key SAP solutions for EHS management:

- **EHS Incident Management**: SCE determined that SAP’s incident management offering could meet their near-miss, injury, environmental incidents, hazardous material releases, and utility-specific event requirements, and also link to other areas of existing SAP implementations such as HR and assets.

- **Environmental Regulatory Compliance**: SCE developed confidence that SAP’s environmental compliance offering could help them sufficiently manage permits and related tasks, as well as other ongoing tasks like daily visual inspections of above-ground storage tanks, measurements, calculations, and reporting.

- **Management of Change**: Deeply related to risk management, SCE felt SAP’s Management of Change capabilities could support environmental impact reviews of construction projects, with embedded GIS mapping, to minimize environmental risk.

- **Hazardous Waste Management**: To meet requirements related to proper storage, tracking, and disposal of hazardous waste, SCE decided that SAP’s EHSM application would be able to support the complete waste lifecycle management process, from initial waste profiling through disposal and cost accounting.

After determining that SAP would be their solution of choice for EHS management, SCE sought out an implementation partner. However, they soon recognized that SAP’s dedicated sustainability services team primarily focused on the vendor’s suite of EHS products, and opted for “simplicity” by choosing SAP’s own implementation team and SAP Services Partner, ARCADIS U.S. Inc.

“We opt for simplification wherever we can and leverage standard functionality wherever possible. As a result we’ve been able to accomplish co-innovation on many of the product gaps in the solution, and as a result (SAP) will build these into future releases.”

- Douglas Ciolli
  IT Project Manager

Looming on the horizon also was SCE’s need for robust scalability. The utility provider projected upwards of 200% increase of infrastructure reliability projects such as
replacement of 35,000 deteriorated poles over the next few years. In order to provide timely environmental review using a streamlined centralized system, meet regulatory agency compliance timeframes, and document environmental compliance assurance for these projects, they needed an EHS program that could manage their business requirements accordingly.

“Our process wasn’t scalable,” explains Ciolli. “It was paper-based, ultimately. It would have required us to hire more than 20 individuals to meet emerging requirements. We had to find a different solution and SAP provided it to us.”

That meant implementing a solution that effectively eliminated the company of its reliance on Microsoft Access databases and Excel spreadsheets. It also meant decommissioning more than 13 legacy applications and moving directly towards a new SAP-based EHS management system.

**Results**

Though only recently live with the four selected EHS solutions, SCE has already identified some substantial benefits in selecting SAP to meet its EHS requirements.

- **Rapid Early Implementation**: SCE has managed to achieve what some would consider an industry-leading pace in its deployment of its initial incident management solution. Efficiently rolling out a new incident management solution covering 15,000 employees and over 5,000 contractors is not an easy feat for most large companies in the best of times. Through close collaboration, however, SCE and SAP were able to implement the first phase of their cornerstone incident management solution in an incredible 12 weeks from October 2013 to January 2014 (and this span included two weeks of holidays). By meeting the project schedule, employees were live on the system and leveraging it effectively, with minimal training.

- **Improved Real-Time Strategic and Tactical Decision-Making**: With better visibility across integrated incident management, environmental compliance/clearance management, hazardous materials management, and reporting systems, SCE is better prepared to make the right decisions by getting critical metrics to the right parties at the right time. One example of better decisions is the way the Management of Change solution allows multi-discipline environmental reviews to happen in parallel, speeding up the process without losing the input of experts. Over 1,700 such reviews were completed in the first 3 months, with 50% being “auto-cleared” through the GIS application.

- **More control and visibility**: Where previous EHS management technology spread information across disparate, redundant sources and repositories, SCE is well positioned to manage critical EHS data within one source that is integrated within existing SAP tools already rolled out across the
enterprise. For example, comprehensive task management ensures that regulatory compliance tasks are completed on time, or an escalation is sent to the responsible manager. To date, nearly 800 tasks associated with over 1600 permits have been closed without any exceptions being recorded.

- **Streamlined relationships with regulators:** Previously, compiling the right information for regulators represented the significant task of pulling information from a variety of different sources and tools. Now, SCE can have confidence in the management and submission of information by relying on one central system to provide all essential information to regulators on the correct schedule, efficiently and accurately.

Though SCE’s EHS rollout is ambitious, the company has also realized where it is advisable to hold back for the time being. For example, the company is retaining a legacy application for claims management until project leaders feel they are ready to move to SAP’s claims offering, or until they determine that the vendor’s claims management offering is mature enough to meet their needs.

**Conclusion**

Throughout SCE’s journey to improved EHS performance involving multiple implementations of EHS management solutions, there are a few valuable takeaways that can help firms on a similar journey achieve success.

- **Ensure executive buy-in:** SCE repeatedly acknowledged that this element was a key to success in their rapid implementation of EHS solutions. By ensuring top-level sponsorship, cross-functional team leaders were able to cultivate grassroots support for new EHS management initiatives, thereby securing companywide support for planned software implementations.

- **Deeply assess integration capabilities:** SCE learned that a system that does not provably integrate smoothly and seamlessly with the core ERP systems you rely on may turn out to be as much of a problem as it is a solution. Assess how chosen solutions will integrate with essential aspects of existing or planned ERP systems, across all elements, including human resources, finance and work management.

- **Re-assess previously bypassed vendors:** Should you have to undertake a new implementation as a result of an implementation without the efficiencies of an integration to ERP functionality, do consider re-evaluating vendors you initially passed over. By nature and through the mechanism of competition, most software vendors reinvest capital into the improvement of their offerings. If a vendor is inadequate in one regard—like EHS—in one software development cycle, don’t discount them should you come to re-evaluate their offering a few years later. Sometimes vendors either integrate acquisitions that are domain experts into their offering, or develop
robust solutions internally based on customer demand. As with SCE, it is 
worth giving vendors a second chance and not necessarily sticking to—
possibly outdated—preconceptions of what they are capable of offering.

- **Set hard yet achievable deadlines for implementation:** SCE attributes 
its considerable 12-week incident management implementation success to 
two key things: setting clear, hard deadlines for success, but also ensuring 
those deadlines were achievable. The former comes from a collaborative, 
disciplined approach with your vendor and, if required, implementation 
partner to achieve, and also dictates that the schedule doesn’t budge. The 
 latter requirement ensures the deadlines are actually achievable based on 
internal and external resources. Set aggressive yet achievable milestone 
deadlines for implementation success, but define those dates against a 
calendar that is actually achievable based on existing resources. Once you 
have balanced both these aspects, build out a hard project management 
calendar accordingly and don’t slip from it. As Roberts notes, “A project 
implementation timeline will go on forever if you let it.”

- **Start change management activities before project kickoff:** To quote 
Roberts again, “You can never have enough change management.” Identify 
a single person as project owner and change management facilitator, and 
use agile methodologies to provide the most immediate value. Also, provide 
functional and technical training for project resources to ensure a seamless 
transition.

SCE has illustrated that, in pursuit of best-in-class EHS management, often the first 
solution implemented may ultimately not be the right one for an organization. While 
integration with existing ERP systems was a key requirement for a seamless EHS 
management system rollout for SCE, this may not be the most essential priority for all 
organizations. Knowing your own organization’s top-priority needs and assessing vendors 
accordingly will be critical to achieving the right EHS management system rollout.

“**A project implementation timeline will go on forever if you let it.”**

- Terri Roberts, 
Corporate EHS 
Compliance Manager

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