

2013 TIP AWARDS

1. Contact Information:

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2. TIP Winner Coordinator:

Coordinator Name: [Kevin Crymes](#)
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3. Past TIP Participation: [No](#)

4. TIP Entry Title: [Exposure reduction through hands-free communication device \(Vocera\)](#)

5. Company Name: [Exelon Nuclear](#)

6. Plant Name: [LaSalle Station](#)

7. NSSS Vendor Category: (check all that apply)

- AREVA-BW
- GE Hitachi Nuclear Energy-GE
- Westinghouse Design-W
- Westinghouse Combustion Engineering Design-CE

8. NEI Process Category:

- OP – Operate Plant
- ER – Equipment Reliability
- MS – Materials and Services
- SS – Management Processes and Support Services
- ✓ [PS – Plant support](#)
- M – Maintenance
- T – Training
- F – Nuclear Fuel
- CR – Community Relations

9. Team Members and Job Title (no more than five team members):

- A. First Team Member, Job Title: [John Moser, Radiation Protection Manager](#)
- B. Second Team Member, Job Title: [Kevin Crymes, RP Senior ALARA Analyst](#)
- C. Third Team Member, Job Title: [Tim Halliday, Radiation Engineering Manager](#)
- D. Fourth Team Member, Job Title: [Dominick Lovino, IT Manager](#)
- E. Fifth Team Member, Job Title: [Curt McCune, IT Technical Analyst](#)

10. Entry Criteria:

In an effort to reduce exposure and improve efficiency LaSalle incorporated the use of the Vocera system, a hands-free communication device. The system is comprised of badges that are worn by the users and allow hands free communication. In addition, the system can be integrated with the phone system and allow users to call individuals. The transition from one-way pager technology to Vocera's two-way solution has dramatically reduced response times for outage and online activities. Also, work flow has dramatically improved; as one of the features of Vocera is a hierarchy in call structure. Therefore, a worker in the field can ask to call a MMD FLS and it would call one and if unavailable automatically route to another MMD FLS. During an outage, LaSalle could expect to save 600 person-hours on the low end. Due to the hands-free nature of Vocera it is ideally suited for RP ALARA use within the plant in high radiation areas and contaminated areas. LaSalle is a high source term plant and there are actions in place to remove/reduce the source term, in parallel the use of the Vocera system to reduce RCA time for the workers has been beneficial in reducing collective radiation exposure. LaSalle has been challenged to reduce collective radiation exposure and implementation of the Vocera system has provided benefits.

LaSalle developed a plan to have the RP and Operation departments pilot the use of the Vocera system. This allowed the site to identify any issues/concerns with the product and resolve the issues in a timely manner. Below is a list of the issues/concerns identified.

- A. Identifying the proper headset to implement with the system was challenging and required numerous trials of various headsets to identify the best solution.
- B. Integration into the phone system is still not complete due to issues coordinating between Avaya and Vocera. It is in progress and expected to be complete by the end of March 2014.
- C. The technology is completely different from traditional communication devices which has required extensive training in its use to ensure satisfactory use.

The teamwork and hard work between IT, Radiation Protection, Operating and Innovative Industrial Systems (IIS) quickly resolved the issues and resulted in a reliable system that has improved communications and reduced exposure.

11. Summary Statement:

In September of 2013, LaSalle successfully implemented the use of the Vocera system. Vocera is a state of the art voice recognition hands-free communication device. This state of the art communication platform combined with LaSalle stations state of the art WIFI backbone has dramatically improved our communication ability.

- a. **Safety:** Describe how the entry maintains or enhances nuclear safety, radiation protection safety and/or industrial safety, as applicable.

In September of 2013, LaSalle successfully implemented the use of the Vocera system. Vocera is a state of the art voice recognition hands-free communication device. The use of this system greatly enhances our ability to communicate out in the field critical data.

For example the Vocera system was used to communicate during the high risk radiological task of transporting an RR impeller from the Dryer Separator Pit to the Refuel Floor. The RPT, supervisor, and remote monitoring technician were able to monitor the work and communicate live time to each other to ensure a successful move. No issues were encountered during the move and this was a credit to the use of Vocera.

Consider including some of the following in your explanation: Risk: CDF/LERF, use of risk analysis, industrial safety measures, accident rate improvements, lost time accidents (hours), human performance.

When describing improvements in Radiation Protection as Avoidance or Reduction of Radiation Exposure please use the following ranges:

Radiation Protection Savings: the following *checkboxes/fill in the blanks will be available on line.*

- 1-10 person-rem
- 10-50 person-rem
- 50-100 person-rem
- > 100 person-rem
- Recurring
- Initial Savings (one time) =
- ✓ **Ongoing Savings (recurring) =**
 - Annual: 8 rem**
 - Life of plant: 160 rem**

- b. **Cost-Savings Impact:** The entry should include quantitative or qualitative data or information that demonstrates significant, tangible cost savings made.

Consider including some of the following measures in your explanation: Critical path days saved, Non critical path days saved, radioactive waste cost savings, replacement power cost, outage labor hours, Non-outage labor hours.

DO NOT express cost savings as Person-Rem. MAKE SURE to indicate a time frame for cost savings (per hour, per day, annually, total, etc.) and note whether salaries are included as applicable.

Cost avoidance: estimate value using \$300,000/day

Outage labor hours: estimate value using \$50/hr

Non-outage labor hours: estimate value using \$40/hr

The most significant saving was in the area of collective radiation exposure. However, financial savings will be realized once site-wide implementation is achieved. Case studies in the medical industry have estimated on average 30 minutes a day are saved utilizing this device and during its demonstration period with RP this seems to be an accurate estimation. It is estimated during L1R15 alone we are expected to save 67,500 person hours will be saved utilizing the device. This is a cost savings of 3, 375, 000 dollars.

c. Innovation: Illustrate how the improvement is unique. Explain how it offers a fresh approach to a standard problem.

The use of a hands free voice controlled communication device is unique in that it allows the nuclear worker to concentrate on the task at hand while calling for assistance. Additionally it keeps the worker in the field performing the task while calling for assistance instead of playing phone tag trying to locate someone via the traditional paging system. Additionally the Vocera system allows users to sign into job functions making it easier for workers to find the person they need to answer their question. This is many steps beyond the traditional step of finding an extension to call, calling that extension, when the person is available leaving a message, and waiting hoping for a call back.

d. Productivity/Efficiency: Clearly define the measurable increases in employee/organization productivity that was gained. If applicable, state how the improvement was collaborative.

Consider including some of the following measures in your explanation: Cycle time, work order cycle time reduction, design process improvements, number of handoffs reduced; turn around time on work, process efficiency gains, outage time reduced, personnel productivity, surveillance reductions, HP survey reductions.

Productivity gains are the primary gains realized with the Vocera system as they are no longer trying to locate a phone out in the plant and trying to locate a person who may or may not be located at their desk.

e. **Transferability:** State how this new knowledge is transferable across the industry, within a fleet or process area.

Communication issues are a major issue throughout the nuclear industry, a state of the art communication device is essential to the nuclear industries goal of lower and lower CRE because if we can enhance the communication of our workforce out in the field we can lower their time out in the field which in turns lower dose.

11. Graphics:

Graphic 1 – Vocera Badge

