THE *NUCLEAR NEWS* INTERVIEW

Sorensen: Prairie Island's 100-day Behavior Outage

Changing employees' culture requires a site-wide plan and site-wide participation.

A 100-day outage at Prairie Island didn't shut down power production, but it did change the way the plant operates. Called a "Behavior Outage," the program was aimed at altering employee culture at Prairie Island. The outage ran from last August to November and was modeled after refueling and maintenance outages in having specific plans and goals.

The Behavior Outage has helped reduce human performance errors at Prairie Island. Outage plans called on employees to examine their attitudes while changing behaviors that contributed to unpredictable performance.

Joel Sorensen, Prairie Island's site vice president, and his management team developed the concept for the Behavior Outage. They initiated it by first calling for an assessment of plant operations to highlight those areas where improvements were most needed. These included change management communications, accountability, leadership, human performance work practices, corrective action, work management, and outage preparation.

The two-unit Prairie Island plant, in Red Wing, Minn., is operated by Nuclear Management Company (NMC). The two units are Westinghouse pressurized water reactors, each rated at 535-MWe (net). The interview was conducted by Rick Michal, *NN* senior associate editor.

Sorensen: "We had to create dissatisfaction with the status quo."

Could you explain the history of the Behavior Outage at Prairie Island?

I solicited some retired nuclear executives to help me understand where our organization was going, whether it was improving or not. Those executives came to Prairie Island the first week of August 2000 and did a self-assessment. As a result, a report they prepared showed that while plant performance had improved over the short term, our organizational effectiveness had been flat for a long time and was remaining flat. We used that report to spur our organization to break out of past behaviors and start moving ahead. The assessment showed that in order for us to have good long-term plant performance, we needed to have good behaviors on the part of our workers, managers, and supervisors.

How did you come up with 100 days for the outage?

We felt we needed to put some urgency on this. We didn't want another plan that would take months and months to execute and where we wouldn't see results. So, we decided to put together a plan to work on behaviors and get results within 100 days. Once we decided on a plan that had a sense of urgency, we decided to treat it like we would a plant refueling outage. For the Behavior Outage, there would be specific outage plans, outage schedules, and daily outage meetings to follow our progress. We patterned it after a refueling outage because we needed a similar way of doing business to get the results we wanted for our behaviors. We felt we could keep both units running safely while spending 100 days focusing on our behaviors.

What did it cost Prairie Island to conduct this outage, and did you bring in an outside vendor to help conduct it?

It doesn't cost much money to work on behaviors. We formed employee cross-disciplinary teams to help develop plans for each of seven focus areas we identified that needed improvement. These seven areas we called "behavior modifications." But we needed help because we were struggling with accountability as a behavior. So we partnered with a private firm—Lord & Hogan, based in Houston, Tex.—to help us understand what accountability means and to work with us on accountable behaviors.

Could you talk specifically about your seven behavior modifications?

Most emphasis for behavior modification was put on our management team as leaders of the plant, but every part of the organization, from supervisors to workers, was engaged in this activity. I'll explain each modification individually:

■ Our first modification is *change management communications,* because we lacked a consistent way of implementing change. We put in place a change management model, which contains a step-by-step process, and we use it to implement all other changes we need to make.

We also realized that communication had to be effective in order to instill these behavior changes across the organization, so we focused on improving internal communications between plant departments. The plan includes a mix of print, electronic, and face-to-face methods—with a strong emphasis on increased frequency of communications and greater supervisor communication with employees.

■ The second modification is *accountability.* During the 100 days, we worked on developing accountability agreements, which laid out how our managers should treat each other with regard to trust and respect. We also empowered a cross section of employees to go out and train their peers on the meaning of accountability. There is no financial incentive for living up to the accountability agreement, but what we find is that when we live these agreements, work becomes much more rewarding. We continue to adopt accountability agreements throughout the rest of the organization.

■ The third modification is *leadership,* and assessments were done for our entire leadership team. Every station manager received an assessment of his or her strengths and weaknesses. Each manager then developed a personal development plan, and they are now living and working that plan.

■ The fourth modification is *human performance work practices.* We put together two teams, one being a cross-section of workers and the other a cross-section of supervisors, that developed a common set of tools for use by plant employees to prevent human error events. These tools are self-checking, procedure use and adherence, communication standards, peer-checking, and "tail-gating" sessions.

Each week during the Behavior Outage we focused on one of these tools to help us understand how to use it in preventing human errors. For example, the "tail-gating" session is something we want all of our employees

Joel Sorensen, Prairie Island vice president, addresses an all-hands employee meeting at the conclusion of the plant's 100-day Behavior Outage. (Photo courtesy of Nuclear Management Company/by Stan Waldhauser)

to work through before they start any task. We want them to be able to summarize the task, anticipate what might go wrong, foresee any consequences, and evaluate what tools could be used to prevent errors. It's a mental checklist for them to use and to discuss with their co-workers before they go out on any task.

Peer checking, of all of the tools, is the one I'm most impressed with regarding how the team came up with it. Peer-checking is common in the industry, but the twist our folks put on it is by actively caring. Generally, people in Minnesota are viewed as near the top in the nation in caring. To carry this active caring to the nuclear plant was innovative and something we continue to build on. Our behaviors prior to the 100-day outage were "conflict-avoidant," which meant that people would avoid conflict. But that has changed. I'll give you an example. A general laborer here recently confronted an operator who was standing above the top safety step on a ladder. This entry-level laborer said to the veteran operator, "Hey, you're not following the ladder safety practices. Why don't you let me help you down and I will help you find a ladder that is the right height for this job." Prior to this, it would have been easy for the laborer to walk by and not confront the operator on the ladder. But when that operator got down from the ladder, he turned to the laborer and said, "Thank you."

■ The fifth modification is *corrective action,* which plays off putting our accountability behaviors into practice. As an entire organization, we were allowing our corrective action backlog to become overdue, knowing it would grow. But strictly by using a highly accountable behavior, we were able to complete 1410 corrective actions and 917 procedure changes in our backlog. We reduced our overdue items from about 300 corrective actions that were overdue to zero. These were all completed during the 100-day Behavior Outage. This was done strictly by holding people accountable, and by completing things when we said we would complete them.

■ The sixth modification is *work management.* Our human performance staff told us that if we didn't fix our work management process, we'd never be able to eliminate human performance events or equipment performance events. Our existing process had been burdensome and ineffective, so we put together a team to overhaul work management. That team learned we didn't have to start from scratch. There were already some good standard processes laid out here and we just needed to work on implementing them. The team put together an implementation plan within the 100 days by using our change management plan process. We are working now to implement the team's plan completely.

■ The seventh modification is *outage preparation.* In the past, we would allow outage milestones to come and go and not be met. But through accountability, we were, for example, able to make sure we met our pre-outage milestones in preparing for Unit 1's refueling outage last January. For that outage, we achieved approximately a 21 percent reduction in overall outage length compared to our refuelings over the previous 10 years encompassing 11 refueling outages.

Much of that reduction was due to the pre-outage preparation. I also credit it to the accountability behaviors on the part of our staff that executed the refueling outage—getting people to own issues, take actions, and commit to completion dates. I saw good results during the outage in the area of emergent issues that came up. Because of these accountable behaviors, we were able to identify, own, and correct emergent issues so they didn't become threats to the outage schedule.

How did the employees react when they were told there was going to be a Behavior Outage?

We had to create dissatisfaction with the status quo. I wanted everyone dissatisfied with the current state of affairs, the state of our organizational ineffectiveness. What we did was gather all the employees together for a "fire and brimstone" meeting to let them know we were not satisfied with the way things were working at Prairie Island. We all needed to change, including me. We then laid out the

"Our behaviors prior to the 100-day outage were conflict-avoidant. . . ."

The Personal Accountability Model

Accountability Loop	Victim Loop
Recognize	Ignore
Own	Deny
Forgive	Blame
Self-examine	Rationalize
Learn	Resist
Renew	Hide

Prairie Island employees learned during their Behavior Outage that accountability is the foundation for providing an environment in which everyone believes they can professionally surface potential conflicts and resolve them. The accountability model above was displayed on posters throughout the plant. As employees broke out of the "victim loop," they began to live their new definition of accountable—"the desire, willingness and ability to change one's behavior in order to effectively respond to new situations," according to Sorensen.

plan and a new vision for the facility that focused on the long term. We had to get people thinking about what we needed to do to be an industry leader. We then set the plan in place, worked the plan, and at the end of the outage we celebrated the accomplishments.

As you went deeper into the Behavior Outage, did you see the culture changing among employees?

We, as an organization, started reading everything we could on changing culture. We recognized that our organization followed what the textbooks said about change: Roughly 20 percent of the organization jumps on board immediately and is helpful as change agents, about 50 percent of the organization sits on the fence waiting to see if it's "real" or not, and 30 percent resists change. We were aware we would need to face these resistors, but we didn't spend a lot of time on them. We focused instead on championing the change agents to help us drive the new culture.

With the Behavior Outage over, has the work force embraced the culture change?

What you're asking about is momentum. As a management team we recognize when we're letting the momentum slip, and I'm extremely pleased with our ability to recognize that. The management team owns that and jumps on it right away to make adjustments to keep the energy level up and the changes going. Can I say that we have driven to 100 percent on our change agents? No, but we continue to work hard at driving the highly accountable behaviors throughout all of our supervisors and entire work force.

Do you know if any other nuclear plants in the U.S. or internationally have conducted an outage like this?

Not to my knowledge. Certainly, organizations recognize that in order to get good results they need to have good behaviors. But it's difficult to drive those behavior changes throughout an organization.

Did any department at Prairie Island benefit more than others because of the Behavior Outage?

One of the things we're striving for is to break down "department silos" [isolation]. The fact that our managers think first as station managers and then as department managers puts a contrary spin on that question. I'd say the site benefited most by knocking the silos down between departments.

Is this type of outage going to be conducted at other NMC nuclear plants?

It's a matter of timing at each individual site. But the NMC is looking hard at modeling our accountability, because we do want to work on accountability across our fleet of plants.

Has Prairie Island become a trendsetter by having a Behavior Outage?

When we return to being an industry leader, I will answer your question. NN