

Control Center Move Involves Countless Details

Scanner Magazine – October 2009

The July move into the new control center – located in the Carley Building (Building C) – involved more than moving personnel and furniture. The transfer required the coordination and cooperation of several departments to provide support to all system operations – an extremely complex and detailed undertaking with little room for error.

The planning process began well before the physical move, as numerous decisions were made regarding the design of the control center and the rooms for the associated computer and communication equipment – down to the size of doors, hallways, and entrances. The key to a successful design was the ability to minimize interruption of service during the transfer of operations.

When the day came to shift operations from the control center's longtime location in the Engineering Building (Building E), the primary consideration was to maintain the communication and functionality of the facility while it remained on line. The control systems group played the lead role in transferring equipment, servers, and network connections into the new control center and computer room. They also worked hand-in-hand with the system operators and the communications group.

"The success of the move was due to months of planning and preparation from several groups, including internal departments and external contractors," said William Fortenberry, control systems assistant. "Everyone worked together and created a seamless transition."

"Our initial responsibility was to have the proper cables and networking equipment in place so that the work could begin as soon as the new control center was ready for occupancy," said Guy Isaac, control systems analyst. "Once the furniture was installed, we ran the cables throughout the control center, which allowed us to minimize the network downtime required to connect the consoles."

When the consoles, computers and monitors, and other equipment were ready, system operators began moving into the new control center. On July 22, system operators Steve Everett and Darren Butler began operations at the transmission and generation desks in the new facility.

"We left one desk fully functional in the old control center in case we ran into any problems throughout the first day and night," said Gary Hutson, system operations manager. "By the afternoon of July 23, the new control center was fully operational."

The approximately 2,400-square-foot facility contains a 64-screen map board and four state-of-the-art consoles for generation, transmission, coordination, and training. Each console can be raised or lowered to allow operators to sit or stand, and each contains a personal heating and cooling vent. If necessary, the control center, which has its own kitchen and restroom, can operate independently in an emergency.

“We are definitely enjoying the added space and comfort,” said Shane Morrow, system operator. “We will probably see the biggest differences in this new control center during a crisis time. At that point, we will really see the benefits of the larger facility, the map board and the increased functionality of the systems. We expect to be able to coordinate restoration more efficiently.”

“We are off to a fresh start in this new center,” added Joe Riels, system operator. “We can no longer say that we have to perform a task a certain way because we have always done it that way. It is also nice that we are more visible to the rest of the company. All of the changes are definitely for the better.”

Once the operators were fully functional in the new control center, the control systems group began moving the servers into the new computer room in Building C. The group utilized the backup control center at the FOC during the time of transition so that the network was not interrupted.

“Moving the servers went surprisingly quickly,” Fortenberry said. “Contractors in Building E were continuing the construction into the old computer room, which forced us to make the move as quickly as we could. At that point, all of our preparations really paid off.”

Stand-alone systems that do not have a critical function for the control center were moved first, followed by the systems that play a vital role in the functionality of the control center. The process was another example of communication and coordination.

“Before we moved a server, we would notify the control center of the functionalities that could be affected,” said Scotty Barron, control systems engineer. “If they said to wait, we waited. Because the systems were operating on backup power, we had extra operators and control systems staff on hand at both locations to protect the integrity of the system.”

With the help of the communications staff, the control systems group moved the servers from Building E by rolling the servers onto a truck with a lift-gate, driving around to the ramp on Building C, and rolling the equipment into the control room. The servers were then reconnected to the network, and an upgraded firewall was incorporated into the system. The communications group also connected the phone lines, two-way radio system, and redirected communications from the multiplexing equipment to the new center.

“The move into the new control center was an extensive project that provided great results,” said Tommy Clark, control and computer systems director. “The planning was more important than the move itself, and it allowed us to complete the task quickly and efficiently.”

“With the addition of Building C, we now have five NERC critical rooms that increase our level of compliance and security,” Clark added. “The addition of the new control center, as well as the computer room and communication room, provided an opportunity to incorporate new layers of security to our system.”

One of the upgraded practices from the previous control center is in the way visitors or employees who are not granted automatic access into the facility are monitored. Visitors may call an operator from a speaker located outside the Control Center door to request access, while an overhead security camera takes a picture each time any of the doors are opened.

Part of the overall Headquarters construction plan has been to protect the new control center with “concentric circles of security,” beginning with the perimeter fence and gates. The next circle is the Building C structure and controlled entry doors. Finally, the control center within Building C has its own special brick and mortar protection on all six sides (four walls, floor and roof).

The same GALAXY security system that controls entry to all controlled access points at Headquarters also provides door access control to the control center. All entries to the control center or attempts to access the room through the card readers are recorded. Motion-activated cameras provide video of all persons entering the control center, and the video records will be maintained for a minimum of three years. Operators have the capability of speaking with persons requesting access to the room to confirm the person’s identity and that he or she is alone. Operators also have remote control of the perimeter gates as well as one door entering Building C and the two control center doors, and the operators may access any of the cameras throughout the Headquarters campus at any time from their computers.

For Operations and Planning Director Steve McElhaney, who has worked for several different organizations, this was the third time he has been involved in a project to relocate a control center.

“This was the most successful transfer that I have seen,” McElhaney said. “The smooth transition was due to the efforts of SMEPA personnel cooperating with each other in order to meet the goal of safety, reliability, and economics.”