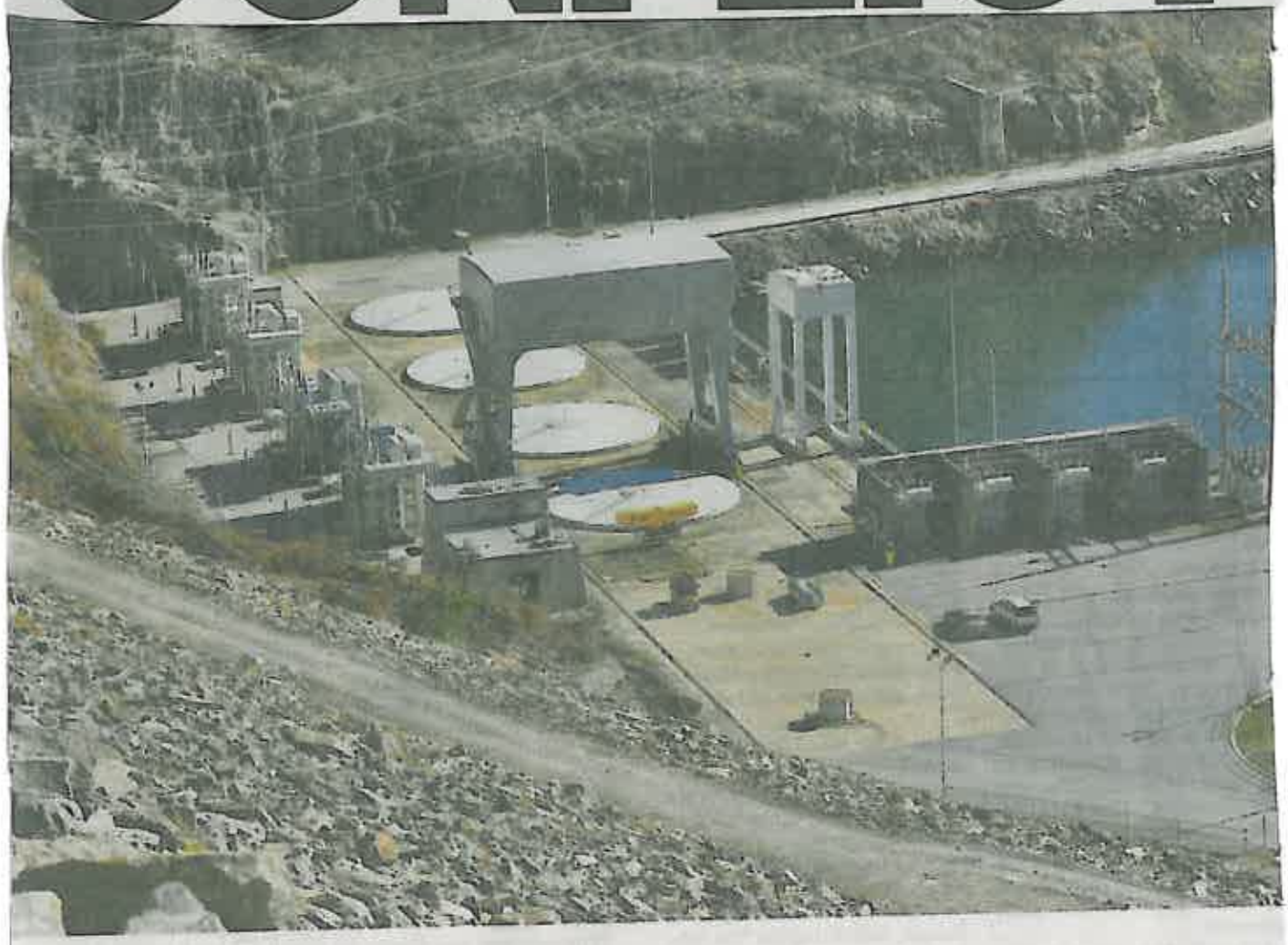
DUKE SAYS JOCASSEE SAFER BECAUSE OF DIALOGUE

EMAIL TRAIL REVEALS CONFLICT



Documents made public show internal debate

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See emails from Nuclear Regulatory Commission staffers about the Jocassee Dam in a video at GreenvilleOnline.com

By Eric Connor
Staff writer
econnor@greenvilleonline.com

Frustration had been mounting as internal messages between government nuclear engineers and inspectors became ever sharper in their tone.

"Shameful." "So many problems." "They don't get it."

Concerns over the potential of a failure of the Jocassee Dam flooding the Oconee Nuclear Station downstream had been real for decades, U.S. Nuclear Regulatory Commission staffers said, yet response from both within and without the agency was lagging.

Recently, the NRC made public hundreds of pages of internal emails that show increasing dissatisfaction among staffers over the response to concerns that Oconee's flood protections were — and still are — inadequate.

The messages represent a large portion of documents made public for the first time on an issue that stretches back to the infant stages of the nuclear station's 40-year history.

The emails, a spokesman for the NRC said, are but snapshots of

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The Jocassee Pumped- Storage Facility rests at the bottom of the Jocassee Dam. Duke Energy, the Upstate's chief power provider, and government regulators debate just how credible a threat a dam failure is. Duke officials say the nuclear station is safe from a dam failure that is nearly impossible. MYKAL MCELDOWNEY/ STAFF

expansive internal dialogue over an issue that — in the end — is being addressed.

The nuclear station is safe in the meantime from a dam failure that is nearly impossible, Duke Energy says, as the Upstate's chief power provider and government regulators debate just how credible a threat a dam failure is.

And the company said the emails reflect an ongoing dialogue that has resulted in safety steps being taken.

Nuclear watchdogs say the internal communication shows an uncommonly resentful sentiment among regulators who complain that their bosses are hesitant to act against an energy giant.

The saga has even prompted some engineers currently working within the agency to speak out publicly.

"Do the senior management people listen to their technical people? There's sometimes pressure not to," says Larry Criscione, a risk-analysis engineer within the agency who for the past several months has publicly criticized the NRC's handling of public information. "Everyone wants to hear the plants are safe and that there's nothing to be concerned about."

Emails

The emails, several dozen dating back to at least 2006, largely show an acronym-laden daily grind of staffers sharing probability data, writing position memos and prepping for regulatory meetings with Duke officials.

However, within the vast amount of communication, several emails depict sharp language characterizing a utility hesitant to recognize the issue, fear among regulators to cause too much of a stir and agency management that has an interest in the issue that waxes and wanes depending on who is charge.

"It is incredible that we bend over backwards for these guys," a former resident inspector at Oconee writes in a 2010 email to a risk-analysis engineer. "Why, I have no idea."

In the email, the inspector writes that he was told by superiors to stop pursuing dam concerns, because "apparently, (my) pursuit of the issue made me look like I was unobjective — out to get the licensee."

The risk-analysis engineer echoes the sentiment in a response: "The real challenge on this side," he writes, "is that keeping the issue alive depends practically on individual effort."

In another 2010 email, a risk assessment engineer writes that a former NRC supervisor changing positions lessened the intensity of scrutiny on the Oconee flooding issue.

In the same email, the engineer writes that NRC regulators in the Midwest are waiting on a resolution to the Oconee issue to determine what to do about flood concerns at the Fort Calhoun nuclear station in Nebraska.

A year after the message, the Missouri River swelled with heavy rains in June 2011, surrounding the station with flood waters and causing a reactor shutdown that remains in effect today as plant operators try to prove the facility is safe for operation again.

In a 2008 email, one engineer shows disappointment that he can't attend a regulatory meeting to express his opinion to Duke himself.

"They don't get it," the engineer writes. Later, he writes, "The games these people have played ... is shameful to say the least."

Asked to review the emails by GreenvilleOnline.com, Duke spokeswoman B.J. Gatten said that the messages represent individual opinions on an evolving issue among U.S. nuclear plants.

"Duke has been working with the NRC as the standards have changed, and those emails reflected our ongoing dialogue," Gatten said. "Since 2008, Duke has made flood-protection modifications, and the NRC has inspected those modifications and found them to be acceptable."

After reviewing the emails, NRC spokesman Scott Burnell told GreenvilleOnline.com that the whole of the correspondence shows ultimately that agency management "was taking the staff's side in pushing forward on requiring Duke to resolve the issue at Oconee."

The emails were released, for the most part, without redaction, he said.

"The e-mails demonstrate the vigorous internal discussions the staff has on challenging technical issues, and they represent individual points of view," Burnell said, noting that agency staffers regularly file "differing professional opinions," a system that provides voice for disagreement.

The NRC, Burnell said, "has taken action during the past few years to ensure Duke had interim measures in place to satisfy us Oconee was safe for continued operation" and that "ongoing oversight at the plant will ensure Duke takes the appropriate actions to permanently resolve the flooding, while also ensuring those actions maintain the plant's current safe operation."

Back and forth

A 2008 memo once held back from the public titled, "Why did the Oconee flood issue take many years to address?" outlines years of on-again, off-again interest in dealing with the subject.

The memo shows the hesitancy of Duke to acknowledge a potential flood risk and a wavering commitment by NRC regulators to pursue the issue of Oconee's ability to protect its backup power system from flood.

The NRC first identified the prospect of a dam failure in 1977 and closed the issue with the expectation that power companies should address upstream dam failures as long as they could cause "significant site flooding."

The topic was raised again in 1991.

A year later, Duke conducted a flood inundation study that showed flood waters would rise "well in excess" of the five-foot walls that shielded the backup power system, known as the "standby shutdown facility."

A 1994 NRC inspection report shows that the issue was closed again after Duke promised to address it.

However, later that year, NRC staffers met with regulators and discovered that the agency's reactor regulation team never told the agency's research team of the issue.

A memo from the meeting shows the regulation team considered the issue one of "minimal importance" but provided no basis for the conclusion.

Regional staff had informed regulators of high water levels at the Jocassee and Keowee dams at the time, but regulators "did not fully recognize the potential consequences" and were focused on other safety-related issues at Oconee, the document states.

In 1995, Duke shared its assessment of a lesser risk of dam failure that wouldn't require modifications to its flood wall, but its submissions to the NRC never mentioned its 1992 flood study to the NRC.

In 2000, based on Duke's submittals, the NRC determined that no vulnerabilities were identified and closed the issue.

An unrelated NRC inspection of the standby facility in 2006 led regulators to believe that Duke might not have adequately addressed the flood

The NRC's research team later shared that it had been unaware both of Duke's 1992 flood study and the NRC's 1994 inspection report.

The case was opened again in 2008 and since then has remained active, the latest action being Duke's conclusion to the NRC last week that its study, following the Fukushima nuclear disaster two years ago, shows a dam failure isn't a credible risk.

The NRC has taken the study under advisement.

'Impediment to your career'

The release of the emails and other documents comes at a time when the NRC has faced increasing pressure from journalists, nuclear watchdogs and, particularly, its own staff to allow more public access to information about the Jocassee Dam issue.

The Jocassee Dam and Fort Calhoun flooding concerns were highlighted in a 2011 report that put forth that chances of a Jocassee Dam failure were more likely than Duke Energy had long claimed and that the nuclear ramifications were far worse than the company would admit.

The report's author, NRC risk analysis engineer Richard Perkins, last fall publicly accused his agency of violating the Freedom of Information Act when it released a heavily edited version of the report, citing security-related concerns.

The NRC stands by the decision to edit the report, Burnell said.

The redactions, Perkins said, were less about security and more about the NRC avoiding embarrassment over how long the agency has allowed the Jocassee Dam issue to languish.

The wall protecting Oconee's backup system from flood is inadequate, Perkins said, as Duke and regulators disagree on their estimations of what would happen should the dam fail.

Fellow risk analysis engineer Larry Criscione has echoed the criticism.

In an interview with GreenvilleOnline.com, Criscione said that the desire to avoid embarrassment is woven with ground-level NRC analysts and inspectors who feel like their concerns are put aside by management more concerned with maintaining the status quo.

The emails, he said, illustrate frustration found in government bureaucracies and corporations who he said "can get away with ignoring prob-



uke Energy officials say that while a dam failure is nearly impossible, it has implemented interim measures o protect against the possibility. KEN OSBURN/STAFF

NRC analysts have put the chances of a dam failure at about 1 in 256, which means the public bears risk that regulators and private enterprise don't, Criscione said.

"Sometimes putting issues to bed is just delaying them until you're no longer in charge," he said. "To be quite honest, if we didn't do anything about this Jocassee Dam issue, the probability of it failing and causing a nuclear accident in South Carolina is extremely small."

Resident inspectors at nuclear plants often find themselves caught in between, said Dave Lochbaum, who used to train inspectors and now is nuclear safety project director for the Union of Concerned Scientists watchdog group.

"The residents do feel some pressure, because the licensees aren't shy about going to their boss if they feel they are being too nitpicky," Lochbaum said. "They want to find issues but not find controversial issues and not get that reputation that you're out to do a hatchet job or just out to nitpick. It's perceived to be an impediment to your career."

However, Lochbaum said, a recent move by the NRC to deny a request by Duke Energy to once again extend a deadline to improve its fire-protection system shows signs that regulators are no longer confining their frustrations to internal emails.

The agency has notified Duke that it might be in violation of its license because of repeated delays, though Duke said it is moving diligently to complete upgrades that will put its fire safety at the forefront of the industry.

The NRC's move, nuclear watchdogs say, is significant and could set a tone for regulation of plants across the country

"At some point, enough is enough," Lochbaum said. "I think it speaks to that frustration level rising at the NRC. They just reached their limit."

NRC spokesman Burnell said the emails are "entirely separate" from the agency's enforcement action on the fire issue.