

Oconee Timeline

Date	Summary of Events
3/4/08	<ul style="list-style-type: none"> Action plan meeting with DORL (Tim McGinty, Melanie Wong, and Lenny Olshan) in Mark Cunningham's office. <ul style="list-style-type: none"> Decided on a simultaneous action plan to concentrate on Oconee and generic industry issues. Compliance backfit was discussed as a possible route. Mark was to contact RES on the GSI/USI program with a possible memo to Chris Liu. Reviewed the draft TIA from Region II. Mike Franovich told Region II (Bob Carroll ?) that we will incorporate it into our action plan.
3/18/08	<ul style="list-style-type: none"> Kamal Manoly put Raman Pichumani on the team. Kamal claimed that Oconee was in compliance with licensing basis however, Raman was unable to find any reference to it. DRA gave guidance to have Raman and Lenny Olshan to speak with Donnie Harrison (then in DSS) and check on the Giambusso letter. Ken See (NRO) suggested that NRC perform its own flood inundation study.
3/19/08	<ul style="list-style-type: none"> Met with Jack Grobe and DORL, DE, and DRA on action plan. <ul style="list-style-type: none"> Jack complained that we did little to follow through after the WHITE finding in the ROP (however, he kept putting this meeting off for months). The meeting turned into a discussion of the exact licensing basis for Oconee. Explained to Jack how Duke removed the SSF wall and Jocassee Dam rupture from the FSAR using a 50.59 evaluation. Lenny Olshan suggested that NRC do a flood height calculation without checking the licensing basis. Jack felt that we should know what the basis is for Oconee. Raman and Lenny had little to show from their investigation of licensing basis outside of what DRA gave them. Action plan to be completed by 3/21/08. Met with Melanie Galloway, Mike Franovich, and Melanie Wong. Melanie Galloway wanted DRA to take the lead on this (despite LIC-202 and LIC-400 states that DORL should take the lead).
3/20/08	<ul style="list-style-type: none"> Asked Raman to check with RES to try to "piggyback" on any existing contracts to do a flood inundation study. Asked Mark Rubin regarding backfit. His branch contracts them out and he suggested contacting DPR.
3/21/08	<ul style="list-style-type: none"> Initial action plan completed and sent to DORL and DRA management. Lenny Olshan contacted Joe Golla in DPR on informing Duke of our intent to <u>backfit the license</u>.
3/24/08	<ul style="list-style-type: none"> Brian Richter in DPR was tasked with the backfit/reg. analysis. Melanie Galloway decided that NRC will not do an inundation analysis since she felt it was the responsibility of the licensee. Raman Pichumani needed a copy of NSAC/60.
3/25/08	<ul style="list-style-type: none"> DE concluded that the IPEEE was the licensing basis.
3/26/08	<ul style="list-style-type: none"> Completed next revision of the action plan. DRA entered it into MS Project.

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3/27/08	<ul style="list-style-type: none"> Scheduled next meeting with Jack Grobe. Pat Hiland suggested to Jack that a 50.54(f) letter should be sent.
3/28/08	<ul style="list-style-type: none"> Major comments from Melanie Galloway on action plan <ul style="list-style-type: none"> Do not show descriptions. Add sections from LIC-202. No mention of flood inundation contract. Postpone meeting with Jack until she returns to office. Melanie reiterated that DRA has the lead.
4/1/08	<ul style="list-style-type: none"> Action plan is rewritten with digital I&C template. Discussions with DE on licensing basis and the IPEEE. DE spoke with Donnie on Oconee licensing basis.
4/2/08	<ul style="list-style-type: none"> Action plan written in new format.
4/3/08	<ul style="list-style-type: none"> Internal DRA discussion on management direction taken on action plan.
4/7/08	<ul style="list-style-type: none"> Further review by Mark Cunningham on action plan. Melanie asked for all the work from DE done to date on licensing basis before next meeting with Jack.
4/8/08	<ul style="list-style-type: none"> Further revision to action plan with new completion dates.
4/9/08	<ul style="list-style-type: none"> Met with Melanie Galloway to postpone meeting with Jack. <ul style="list-style-type: none"> Requested that DE do more work on licensing basis. Additional comments on action plan.
4/10/08	<ul style="list-style-type: none"> Pre-meeting with DE and DORL. <ul style="list-style-type: none"> Raman discussed the 50.59 that Duke had performed removing the wall and Jocassee Dam failure from the FSAR. Discussed performing a compliance backfit exception vs. a full backfit. DORL was to check with OE on enforcement options of having Duke restore the wall and Jocassee Dam failure to the FSAR. DORL was to check with Eileen McKenna on the 50.59 evaluation that Duke performed. DE was to check with FERC on the flooding analysis. Checked on whether license renewal SAMA table was still valid. Met with Melanie Galloway who presented a bulleted list of concerns and additional comments to the action plan. Met with Jack Grobe (DE, DORL, and DRA). <ul style="list-style-type: none"> Jack was satisfied with progress made. Compliance backfit exception option will be explored by 4/29/08. Jack expressed that a full backfit should be done given Duke's record of fighting NRC. Melanie met privately with Jack to further discuss actions and his praise of the team.
4/15/08	<ul style="list-style-type: none"> Suggestion from Dave Beaulieu (DPR) that when it was in licensing basis, the SSF 5-ft wall records should maintained as part of Appendix B requirements. Passed on to DE and Region II to check into this.

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4/16/08	<ul style="list-style-type: none">• Meeting with Melanie Galloway and Mike Franovich to establish a weekly schedule of separate meetings with responsible NRR management and staff level personnel.• Preparation of a bulleted list of pros and cons for a compliance backfit exception and a full backfit.• DE asked to search for modification package of the 5-ft wall from the licensee.
4/17/08	<ul style="list-style-type: none">• Involved Jim Vail on searching for the original modification package for the wall.• Cliff Doult gave some information on Oconee and the SSF construction.• Looked into pursuing a GL 91-18 (RIS-2005-20) path on operability assessments against the Oconee SSF.
4/18/08	<ul style="list-style-type: none">• Gave package of information from Cliff Doult to Raman to see if there is anything he can use on checking for licensing basis.
4/19/08	<ul style="list-style-type: none">• Met with DE, DORL, and DPR.<ul style="list-style-type: none">◦ Discussed proposed table from DORL on how to proceed.◦ Discussed the 50.59 Duke had done to remove Jocassee Dam failure and the 5-ft wall from the FSAR. Lenny Olshan told the group that Harold Chernoff agreed with him that a risk argument was an acceptable means in a 50.59 (??).◦ Agreed on getting OGC involved in further actions.◦ Agreed on a two-prong approach:<ul style="list-style-type: none">▪ Pursue the licensee's incorrect use of 50.59.▪ Perform the regulatory analysis and backfit.<ul style="list-style-type: none">• Mike Franovich did voice concerns that a backfit would be an admission that NRC did not regulate the licensee properly in that a flood protection requirement is a mistake.
4/23/08	<ul style="list-style-type: none">• Mike Franovich put together a summary from the meeting of 4/19/08.• Melanie Galloway requested a summary of all backfit items that need to be done.
4/24/08	<ul style="list-style-type: none">• Had discussions on backfit with DPR.
4/28/08	<ul style="list-style-type: none">• Work on backfit analysis plan.• Put together a proposed schedule for the backfit.• Set-up an Access database of the schedule based on MS Project – Melanie wanted it to be similar to what Mark Cunningham uses.• Raman reviewed Oconee's mod. package on ASW.• DE put together a list of documents review to date for project.
4/29/08	<ul style="list-style-type: none">• Met with Jack with DORL, DE, Melanie Galloway, and Mike Franovich.<ul style="list-style-type: none">◦ Jack concluded that a backfit was a better approach to 50.59.◦ Mike argued over the backfit being an admission of guilt.◦ Kamal had confused the IPEEE with licensing basis arguing that we cannot change anything since we accepted their IPEEE submittal.◦ Jack felt that DRA should do the risk analysis portion for the backfit.• Discussed performing part of the backfit PRA analysis with Bob Palla of DRA/APLA.

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4/30/08	<ul style="list-style-type: none"> • Staff level meeting with DPR, DORL, and DE. <ul style="list-style-type: none"> ○ Summarized the meeting with Jack for Jake Zimmerman. ○ Informed the team that Bob Palla will be doing part of the risk analysis required for the backfit. ○ Jake suggested that we ask all the PMs in DORL on any plants with flooding vulnerabilities. ○ Discussed a LIC-504 meeting plan for the end of May 2008. • Walt Rogers (Region II) sent over a SWSOPI inspection report on Oconee which had mention of the discrepancy between the 5-ft wall and the inundation levels.
5/6/08	<ul style="list-style-type: none"> • Bob Palla completed the averted and replacement power costs for Oconee for both Jocassee Dam failure frequencies. • Staff level meeting where results were given to DPR. • Wrote a POP for Eric Leeds on Oconee flood project progress.
5/14/08	<ul style="list-style-type: none"> • Staff level meeting with DPR, DORL, DE. <ul style="list-style-type: none"> ○ Discussed the backfit analysis and some changes made to the averted costs. ○ George Wilson sent over some material from FERC on Jocassee Dam. ○ A discussion of LIC-504 was made. ○ Kamal reprised his IPEEE and licensing basis argument.
5/15/08	<ul style="list-style-type: none"> • Prepared project flowchart for directors' level meeting on 5/15/08. • SES level meeting. <ul style="list-style-type: none"> ○ Mike Case (DPR) advocated going to the licensee to get cost information – was not feasible due to the restrictions in LIC-202 on contacting licensees prior to backfit. ○ Pat Hiland wanted to know about leak-before-break and whether the Jocassee Dam inspections were different than other "high hazard" dams. • Asked Region II and the Oconee Resident to put together a package of material to answer the questions.
5/20/08	<ul style="list-style-type: none"> • Additional flowchart comments from Melanie Galloway.
5/21/08	<ul style="list-style-type: none"> • Met with Jack Grobe. <ul style="list-style-type: none"> ○ Expressed that he felt we did not have an adequate protection argument. Jack couldn't define adequate protection. ○ He did not want us to use LIC-504 formally. ○ On the backfit work, Jack wanted to triple radionuclide release fractions. ○ Jack wanted DORL to put together a 50.54(f) letter by 6/9/08. • Met with Steve Laur over using LIC-504. Steve discussed his experience with Jack using LIC-504 on past issues.
5/22/08	<ul style="list-style-type: none"> • DRA meeting with Geary Mizuno of OGC on adequate protection. <ul style="list-style-type: none"> ○ Geary discussed the history of the term and backfit ○ Decided that LIC-504 is necessary and expanded to invite directors to the proposed meeting.

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5/30/08	<ul style="list-style-type: none">• LIC-504 meeting.<ul style="list-style-type: none">○ Steve Laur gave a presentation on the process.○ Pat Hiland argued against pursuing flood protection on several points and was not convinced of the lack of adequate protection.○ None of the developed options for review had the opportunity to be presented.○ Andy Hutto (Oconee site Resident) by phone expressed concern over the condition of the roads after floodwaters recede.○ Ed Williamson of OGC will work with us on any further actions.○ SES concluded that a demand-for-information (50.54(f)) letter should be written and given to Jack for comment soon.
6/3/08	<ul style="list-style-type: none">• Directors discussed adequate protection – Pat Hiland stated that he was convinced that there was a lack of adequate protection but, later recanted this.• Spoke with Bruce Boger on Oconee who admitted that although he has had some briefings with this staff, he doesn't understand all the specifics of the case.• Mike Franovich produced a draft flowchart on how to proceed after the LIC-504 meeting. Melanie Galloway advocated the previous parallel approach. Mike wanted complete management approval before proceeding with any approach.
6/4/08	<ul style="list-style-type: none">• Met with Pat Hiland with DE, OGC and DORL.<ul style="list-style-type: none">○ Geary Mizuno discussed adequate protection.○ Found out that the licensing basis was in the construction permit for Oconee. Lenny Olshan's argument that there was no flooding licensing basis was incorrect. Oconee is licensed to a draft version of GDC-2. Lenny admitted that he knew this all along but, didn't understand how this would help us in this project.○ George Wilson discussed the "high hazard" dam classification and the inspection regime.• Lenny Olshan sent out a draft version of a 50.54(f) letter.• SES level meeting with Jack.<ul style="list-style-type: none">○ Got authorization to pursue the backfit.
6/11/08	<ul style="list-style-type: none">• Further checked into the 50.59 argument Duke used to remove references in the FSAR. Duke claimed that it was incorrectly added to the FSAR so they felt that they can remove them.
6/12/08	<ul style="list-style-type: none">• Got a copy of the Federal Register (Volume 32, Number 132, 7/11/67) which contained the draft GDC-2 that Oconee is licensed by.
6/13/08	<ul style="list-style-type: none">• DORL presented a further revision to their draft 50.54(f) letter to Duke.<ul style="list-style-type: none">○ Jack Grobe wanted all licensing basis references removed.
6/18/08	<ul style="list-style-type: none">• Discussed with DORL further points, structure, and references to add to the draft 50.54(f) letter.
7/8/08	<ul style="list-style-type: none">• Jim Vail working on Information Notice on external flooding.• Planning on meeting with Jack Grobe due to his trip out of the office.• Transition plan on having someone else taking over the project.
7/9/08	<ul style="list-style-type: none">• RES-sponsored discussion of flooding analysis and PMP with USBR (John England).• Met with Melanie Wong to discuss planning on OGC sessions with NRR SES on backfitting.

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7/11/08	<ul style="list-style-type: none"> • IN revised after checking LIC-503.
7/14/08	<ul style="list-style-type: none"> • Meeting with SES and Geary Mizuno. <ul style="list-style-type: none"> ◦ Discussion of backfitting. ◦ Discussions on pursuing a compliance backfit exception.
7/15/09	<ul style="list-style-type: none"> • Follow up meeting with SES (Mike Franovich attended). • Lenny Olshan to look into any 50.59 that was used for construction of the 5-ft wall around the SSF. He found the documentation that Duke stated the wall was built as a result of NSAC/60.
7/28/08	<ul style="list-style-type: none"> • Met with Eric Leeds and DE, DORL, DPR, and Bruce Boger. <ul style="list-style-type: none"> ◦ Mike Franovich presented the POP and discussion of Oconee flood. ◦ Kamal reprised his one IPEEE concern.
7/29/08	<ul style="list-style-type: none"> • Mike discussed a meeting that he and Melanie Galloway had with NSIR and DHS. <ul style="list-style-type: none"> ◦ Meeting with Eric Leeds and Luis Reyes set for 8/1/08. ◦ Will create a one-page summary.
8/1/08	<ul style="list-style-type: none"> • Meeting with Eric Leeds and OGC, DE, DORL, OE, and R-II (on videoconference). <ul style="list-style-type: none"> ◦ Mike Franovich gave presentation on issue. ◦ Eric and Luis decided to issue a 50.54(f) letter. ◦ Eric and Luis will call Dave Baxter (Oconee site V-P).
8/4/08	<ul style="list-style-type: none"> • Further comments on the 50.54(f) letter draft from OGC. • Questions from Ed Williamson on acceptance of Oconee's license renewal application (it turned out that we lack grounds to rescind granting their license renewal).
8/5/08	<ul style="list-style-type: none"> • Met with staff to prepare for meeting with Bruce Mallett. <ul style="list-style-type: none"> ◦ Preparation for telephone call to Duke Management. ◦ Discussed what kind of analysis Duke would have to do. ◦ Discussed possibility of issuing an order. • Mike met with Melanie Galloway regarding her SES meeting where Jim Wiggins expressed doubt that we can pursue this issue with Duke since they have already committed to installing MSIVs, performing HELB and tornado analyses. Joe Giitter learned of the lack of MSIVs during the meeting.
8/6/08	<ul style="list-style-type: none"> • Met in Bruce Mallett's conference room with NRR SES and Jim Wiggins. <ul style="list-style-type: none"> ◦ NSIR initially classified meeting as SGI – had to hang up from Region II (Vic McCree). ◦ Mike Franovich made the presentation. ◦ Jim Wiggins was in favor of sending a regular correspondence (non-50.54(f)) to the licensee (this would violate the Paperwork Reduction Act). Jim wanted us to call the licensee only after we issue the letter. ◦ Bruce Mallett was in favor of issuing a 50.54(f) letter based on his past experience with Duke. He was in favor of a pre-issue phone call.
8/7/08	<ul style="list-style-type: none"> • Met with DORL on preparation of "talking points" for the phone call to Duke. <ul style="list-style-type: none"> ◦ Discussed Bruce Boger's idea of calling several days before issue of the letter. That idea was disbanded. ◦ We decided to call Duke's compliance manager on the morning of the call with Eric Leeds and Luis Reyes. ◦ Discussed points for the Commissioners' T/A briefing.

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8/8/08	<ul style="list-style-type: none">• Further discussions with NSIR on removing this issue as SGI, downgrading it to OUO-SRI. Meeting was set for 8/11/08 cancelled.
8/12/08	<ul style="list-style-type: none">• Met with NSIR.<ul style="list-style-type: none">◦ Explained the background of the flooding concern.◦ NSIR determined that this is not SGI based on several reasons, one of which is the potential release exceeding 10 CFR 100 guidelines.◦ Can classify this as OUO-SRI.• Lenny Olshan got a call from the Oconee Regulatory Compliance Manager who received a call from local law enforcement asking, from DHS, for the zone security analysis records of Jocassee Dam. Lenny was asked not to speak with the licensee on this matter until Eric and Luis calls them.• Commissioners' T/A briefing. Mike Franovich made the presentation.• Staff meeting with DORL, DPR, and DE.<ul style="list-style-type: none">◦ Despite sending the 50.54(f) letter, we are still continuing with the backfit path as a contingency.
8/13/08	<ul style="list-style-type: none">• Jack Grobe had additional comments on the 50.54(f) letter. Had to remove and rewrite one of the questions (Question 2). Mike Franovich worked on it.• Answered simple question from Commissioner Svinicki on sending a 50.54(f) letter.
8/14/08	<ul style="list-style-type: none">• Bruce Mallett called the Duke CNO.• Prepared timeline with Region II for Commissioner Svinicki.• Timeline to be used for call between Duke with Eric and Luis.
8/15/08	<ul style="list-style-type: none">• Phone call between Duke with Eric and Luis.<ul style="list-style-type: none">◦ Duke response that they were blindsided by this issue (??).◦ Duke Management expressed desire to fix this problem.• 50.54(f) letter issued to Duke.
8/19/08	<ul style="list-style-type: none">• Impromptu meeting in Jack Grobe's office on possible face-to-face meeting with Oconee management.<ul style="list-style-type: none">◦ Jack expressed his concern that he didn't want to engage the licensee in a meeting (being in a listening mode).◦ Len Wert should come up from Region II.◦ DRA to make a presentation along with DORL.• Mike Franovich had concerns over Jocassee Dam's seismic fragility.• Raman to work on contingencies to be taken on Duke's response.

Oconee Timeline

Date
8/20/08

Summary of Events

- Briefing with Mark Cunningham on Oconee flood generic aspects.
 - Discussed how GSI-154 was possibly prematurely closed out.
 - Jim Vail discussed progress with the Information Notice.
 - Mark wanted to discuss this directly with Mike Case (after speaking with Marty Murphy).
- Mike Franovich received a call from John Zeiler (a rotational Commissioner's T/A from Region II) questioning split fractions Duke used and his concerns that Duke's evaluation of Jocassee Dam is more rigorous than ours.
- Met with OPA/OCA and DORL on briefing Congress.
 - No set threshold for briefing Congress.
 - Waiting for Congress to reconvene after summer recess.
 - Need to summarize this for the approximately 14 Oversight Staffers.
- Staff meeting with DORL, DE, DPR.
 - Discussed contingencies on the face-to-face meeting and letter response.
 - Mike Franovich discussed the possibility of a commitment with a Confirmatory Action Letter (CAL) from Duke.
- Phone call to Duke Management on the letter with DORL, and Region II.
 - Duke claimed that they did not understand the questions in the letter and wanted an extension to the deadline.
 - We expressed the need for them to concentrate on response to the specific questions in the letter.
 - Face-to-face meeting within a week.
 - Duke wanted pre-decisional backfit bases which we refused to give them (LIC-202 and a DHS concern). Duke expressed need for information stating that law enforcement officials told them the NRC requires this information.
 - Duke stated that they did not understand the adequate protection argument.
- Jack Grobe had a follow-up phone call with Duke and Mike Franovich on Duke's concern on dam failure frequency. Mike offered to discuss the details in a call on 8/21/08.
- Melanie Galloway and Tim McGinty selected to give presentations during the face-to-face meeting.

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8/21/08	<ul style="list-style-type: none"> • Met with Craig Ehrlanger (NSIR) on our interface with DHS. <ul style="list-style-type: none"> ○ Tentative meeting set with DHS representative to explain the Jocassee Dam concern on 8/25/08. ○ Further meeting in September with Assistant DHS Secretary. ○ Discussed very few aspects of the Buffer Zone Protection Plan related to Jocassee Dam but could not share or show us. ○ Reminded Craig that Mark Cunningham discussed this issue with NSIR on November 2007. • Phone call with Duke Oconee Management, Duke Headquarters PRA, Region II, and the site Residents on the dam failure frequency. <ul style="list-style-type: none"> ○ Jim Vail discussed the two failures counted for the failure frequency determination. ○ Duke was not interested in discussing the apparent large discrepancy between our dam-year computations. ○ Duke claimed that this call will help them put together an interim contingency plan while they concentrate on a long term corrective action.
8/25/08	<ul style="list-style-type: none"> • Preparation of tables for the face-to-face meeting with Duke on initiating event frequencies and consequences. Made figures instead of table. • Duke proposed an Oconee site meeting the week of 9/15/08 to tour the SSF and Jocassee Dam. We declined. • DHS meeting was cancelled. • Steve Laur to review the draft IN from Jim Vail. • Meeting in Melanie Wong's office. <ul style="list-style-type: none"> ○ Rich Freudenberger will be in the office and plans a drop-in visit to Joe Glitter. ○ Suggested briefing for Joe. • Discussed the closeout of GSI-157 and the IPEEE review with Gary Demoss in RES.
8/26/08	<ul style="list-style-type: none"> • Additional comments to the draft IN from Steve Laur for Jim Vail. • DORL developed checklist for Duke face-to-face meeting. • Staff meeting with DORL and DE. <ul style="list-style-type: none"> ○ Comments over draft presentation for the Duke face-to-face meeting. ○ Schedule meeting with Jack to go over new presentation.
8/27/08	<ul style="list-style-type: none"> • Pre-meeting with Melanie Galloway on additional comments to the presentation along with contingencies on Duke's response. • Met with Jack Grobe. <ul style="list-style-type: none"> ○ Jack expressed a desire to soften the message to Duke. ○ Concentrate only on limited flooding contribution from Jocassee Dam rupture and no other flood source. ○ Concentrate on random failure of Jocassee Dam only. • Further presentation rewriting.

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8/28/08	<ul style="list-style-type: none"> • Met with Jack and DORL, DE, DPR, and OGC. <ul style="list-style-type: none"> ○ Jack underscored the need to listen only. ○ We should address the FERC study. ○ Only concentrate on Jocassee as a random-failure-only flood source. ○ Reassigned presenters for meeting based on comments from OGC. ○ Last minute major changes to presentation. • Face-to-face meeting with Oconee Management and Duke Headquarters PRA. <ul style="list-style-type: none"> ○ Duke expressed their desire to parse out dam failure frequencies into discrete inundation levels based on their two industry failure events. ○ Duke claimed that they have contracted Dr. David Bowles from Utah State University to perform a dam frequency failure calculation. ○ Duke discussed the spillway design of Jocassee and that it differs from the other dams in the database. ○ Duke admitted that they could not reproduce the original NSAC/60 calculation of a 4.71-ft inundation height. ○ Duke presented the Potential Failure Modes Analysis (PFMA). ○ Duke briefly brought up a potential engineering solution of installing watertight doors.
9/2/08	<ul style="list-style-type: none"> • Staff level meeting with DORL, DE, RES. <ul style="list-style-type: none"> ○ Raman mentioned that George Wilson spoke with FERC on the PFMA Duke presented during the meeting. ○ Revised list of milestones required from DRA.
9/3/08	<ul style="list-style-type: none"> • Met with Dave Decker in OCA <ul style="list-style-type: none"> ○ Discussed presentation to Congressional Staffers. ○ Dave plans on briefing them 9/9/08 or 9/10/08. ○ DORL to get a copy of the FERC response to Duke Hydro on the 1992 inundation study. ○ George Wilson to brief FERC before OCA briefs the Congressional Staffers (South Carolina delegations). • Prepared a one-page paper on parsing data for Jack Grobe and why PMP needs to be considered. Based it on R.G. 1.59 and 1.102.
9/4/08	<ul style="list-style-type: none"> • Prepared a one-page paper on parsing data for Melanie Galloway and why PMP needs to be considered. Based it on R.G. 1.59 and 1.102.
9/9/08	<ul style="list-style-type: none"> • Staff meeting with DORL, DE <ul style="list-style-type: none"> ○ Discussed preparations for NRR LT and ET meeting. ○ Discussed briefings for management after Duke sends their 50.54(f) response in. ○ Waiting for responses from NSIR and the Congressional delegations.
9/10/08	<ul style="list-style-type: none"> • Contact to Dave Decker from Annie Caputo (Senator Boxer's office) regarding why NRC did not order Oconee to shut down. <ul style="list-style-type: none"> ○ Prepared a response.
9/11/08	<ul style="list-style-type: none"> • Further complete rewrite of the draft IN. • Discussions in DRA on how to perform a dam frequency calculation that way that Duke would do.
9/17/08	<ul style="list-style-type: none"> • Given a letter at Region II which outlined a meeting at NRR regarding Oconee issues from the SWSOPI including the inundation study results and decision not to pass it on to RES for IPEEE submittal review.

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9/20/08	<ul style="list-style-type: none"> • Mike Franovich met with DHS and NSIR on Jocassee Dam failure and Oconee.
9/23/08	<ul style="list-style-type: none"> • Discussed the generic issue and possible TI. • Prepared bulleted slides for Melanie to use for SES briefing on 9/25/08. • Staff level meeting with DORL, DE, and RES. <ul style="list-style-type: none"> ◦ Discussion of DHS meeting. ◦ Requests to get additional information from FERC.
9/25/08	<ul style="list-style-type: none"> • DRA prepared presentation on dam failure frequency for SES meeting.
9/26/08	<ul style="list-style-type: none"> • DORL received Duke's response to the 50.54(f) letter.
10/1/08	<ul style="list-style-type: none"> • Staff meeting with DE, DORL, and NRO (Ken See and Goutam Bagchi, a new member). <ul style="list-style-type: none"> ◦ Discussion of the Duke response letter and how to respond. ◦ Ken See discussed how a 1-D model can be as detailed as some 2-D models. ◦ Possible call with their hydrology engineers after Ken heard from them that NRC would accept 2-D models. ◦ Discussed Bob Palla of DRA/APLA to evaluate containment failure time.
10/2/08	<ul style="list-style-type: none"> • Discussed with Bob Palla containment failure timing. He agreed that it would be 40-50 hours after the onset of core damage. • Further presentation on dam failure frequency distributions.
10/6/08	<ul style="list-style-type: none"> • Staff meeting with DORL, DE, NRO. <ul style="list-style-type: none"> ◦ Goutam to speak with Jon Ake on an additional beta-factor in the ARES seismic fragility study. ◦ Goutam has concerns over rock integrity, soil liquefaction, and impaction. ◦ Technical phone call set for 10/9/08 to discuss inundation study modeling with Ken See. ◦ A LIC-504 meeting is scheduled for 10/15/08. ◦ Briefing for Eric Leeds is set for 10/16/08 with him briefing the Chairman on 10/17/08.
10/14/08	<ul style="list-style-type: none"> • Staff meeting with DORL, DE, and NRO. <ul style="list-style-type: none"> ◦ Telephone call with Duke scheduled for 10/15/08. ◦ DORL cautioned that seismic questions can not be asked during the call. • Preparation of briefing for Eric Leeds. • Preparation of LIC-504. • Dave Skeen in as DD/DE.

Oconee Timeline

Date	Summary of Events
10/15/08	<ul style="list-style-type: none"> • Phone call with Duke technical personnel, Duke Headquarters PRA with NRO, DE, DORL, and Oconee site Resident. <ul style="list-style-type: none"> ○ NRC questions on Duke's choice not to use 2-D analysis and the commitment to extend the SSF wall only by 2.5 ft. ○ Duke claimed that the existing SSF wall would not be able to handle any additional load. They decided to use 1-D HEC-RAS. ○ Discussed an engineering solution of installing watertight doors which would solve many of the shortcomings of the design. Ken See expressed his view that this would be the best solution. • LIC-504 meeting (in EBB) with SES representation from DRA, DORL (detailed deputy director from DOE), and DE. <ul style="list-style-type: none"> ○ Expressed concerns over seismic fragility. ○ Large bands of sensitivity of inundation level. ○ Concerns over the non-conservative breach parameters done in the original 1992 inundation study. ○ Discussion of the next face-to-face meeting and that it should be a management level one. ○ Watertight doors with re-engineering the intakes/ventilation appeared to be the best solution to the problem.
10/17/08	<ul style="list-style-type: none"> • Comments from inside DRA over NRR ET/LT presentations.
10/20/08	<ul style="list-style-type: none"> • Revised ET/LT presentations with comments from other division SES. <ul style="list-style-type: none"> ○ Ken See added the uncertainty in the breach parameters using a text book.
10/21/08	<ul style="list-style-type: none"> • NRR LT presentation given by Mike Franovich. <ul style="list-style-type: none"> ○ DORL wanted to blend the dam failure frequency with deterministic licensing basis. ○ DE felt that decisions shouldn't be made in this meeting. • Prepared next presentation to the ET.
10/23/08	<ul style="list-style-type: none"> • NRR ET briefing. <ul style="list-style-type: none"> ○ Eric Leeds wanted us to define success for this issue and that it shouldn't be like the others with Oconee. ○ Discussed allowing Duke to choose how to resolve this. ○ DE proposed giving Duke one year to perform the work and one year for NRC review. • Concerns of the site Residents that we were not addressing the long 72-hr allowed outage time of the SSF. We told them that this will come later.
10/30/08	<ul style="list-style-type: none"> • Met with Jack Grobe on presentation for the Duke Management meeting. <ul style="list-style-type: none"> ○ Wanted to change direction and not summarize anything up front. ○ Jack suggested a 6-year allowance to Duke to operate with this vulnerability with a renewal period. ○ Jack did not initially want a technical solution presented then wanted a short-term and a long-term solution to be presented. ○ We should allow Duke to perform a more complex inundation study. ○ Discussed uncertainties involved. • Re-wrote new presentation without technical details for DRA and DE comments. • Started work with DORL on preparing a response to the Duke 50.54(f) response.

Oconee Timeline

Date	Summary of Events
10/31/08	<ul style="list-style-type: none"> • Contact Ed Williamson in OGC on current efforts and potential backfit. Ed assigned Marcia Simon and Cathy Marco on it. • Met with Jack. <ul style="list-style-type: none"> ◦ Was not satisfied with the rewritten presentation. ◦ Suggested a more simplified format addressing licensing basis adequacy. ◦ Jack planning on a call with Dave Baxter.
11/3/08	<ul style="list-style-type: none"> • Discussions with DORL on the allowed outage times for equipment in the SSF. Most of these need to be radically changed in light of the new dam failure frequency. • Starting to work on a JCO which Mike Franovich started on.
11/4/08	<ul style="list-style-type: none"> • DORL asked Duke about controlling lake levels and maintaining Lake Jocassee at the drought level. Duke claimed that they would not be allowed to do so. • Further concerns voiced by Ken See over the validity of selection of breach parameters from the 1992 FERC inundation study. • Email from Jack that he changed his mind over the presentation material and did not want to use it.
11/5/08	<ul style="list-style-type: none"> • Met with Jack with DORL, DE, NRO, and OGC. <ul style="list-style-type: none"> ◦ Discussed the pitfalls of developing a JCO for Oconee based on failure of the SSF. ◦ A risk-informed LAR would not be acceptable since Duke does not have a R.G. 1.200 model of dam failure frequency. ◦ Rewrote the presentation once again. • Met with Duke Oconee Management, DRA, DE, DORL, OE, Region II, Site Residents, Duke Hydro, and Duke HQ PRA. <ul style="list-style-type: none"> ◦ Presented NRC view that parsing out the dam frequency to guide smaller inundation studies would not solve the adequate protection question. ◦ Questioned Duke over soil compaction and west embankment seepage. ◦ Duke claimed that they "spec'ed out" the watertight doors but, having planned on installing them. ◦ Duke made no commitments outside of more analysis. ◦ Duke erroneously claimed that we approved their seismic fragility study for Jocassee Dam. ◦ Melanie Galloway made NRC point-of-contact for Duke.
11/6/08	<ul style="list-style-type: none"> • Discussed with NSIR a meeting with DHS.
11/12/08	<ul style="list-style-type: none"> • Staff meeting with DORL, DE, RES, NRO. <ul style="list-style-type: none"> ◦ DE sent FERC the 50.54(f) letter. ◦ RES want the foundation records for the dam. ◦ Ken See to contact Ken Fearon at FERC. • Duke contact DORL on the JCO. DRA told DORL that NRC will not write a JCO but, Duke should prepare it for our review.

Oconee Timeline

Date	Summary of Events
11/14/08	<ul style="list-style-type: none"> • Call with FERC (Dan Mahoney, Ken Fearon, and Wayne King), DORL and DRA. <ul style="list-style-type: none"> ◦ Discussed the inundation calculations and how NRC views PRA vs. licensing basis. ◦ FERC will pull records on the dam construction. ◦ PRA is in the developmental stage at FERC. ◦ FERC suggested a face-to-face meeting.
11/26/08	<ul style="list-style-type: none"> • Met with DHS (Craig Conklin and his staff) at their offices with DE, DRA, and NSIR. <ul style="list-style-type: none"> ◦ Discussed the issue and consequences of dam rupture. ◦ Discussed generic implications at other sites. ◦ DHS discussed some of their insights on infrastructure and requested some additional information from NSIR.
12/1/08	<ul style="list-style-type: none"> • Met with FERC at their offices (was out of office).
12/4/08	<ul style="list-style-type: none"> • Met with Duke technical staff (was out of office).
12/16/08	<ul style="list-style-type: none"> • Meeting with Melanie Galloway with DE, DRA, Region II, and DORL. <ul style="list-style-type: none"> ◦ Discussed seismic response of the dam and the licensee's use of seismic margins for the IPEEE. • Roy Zimmerman briefed Bruce Mallett on the security aspects of the issue.
12/17/08	<ul style="list-style-type: none"> • First draft of the response to the Duke 50.54(f) response written.
12/18/08	<ul style="list-style-type: none"> • Discovered that Jack Grobe has designated Pat Hiland to take the lead on the Oconee flood issue during the past week after Luis Reyes visited the site. • Gave Melanie the response letter with an attachment. • DE was tasked with preparing a JCO. Melanie expressed her desire to support this effort.
12/22/08	<ul style="list-style-type: none"> • Complete revision of draft letter to Duke on their 50.54(f) response. • Discussion from DE on FERC concerns over NRC being critical of their licensing of Jocassee Dam.
12/23/08	<ul style="list-style-type: none"> • Call between Duke (Rich Freudenberger) and Melanie Galloway (DRA) on the revised HEC-RAS inundation study progress. <ul style="list-style-type: none"> ◦ Duke claimed that inundation levels might exceed 9 feet.
12/30/08	<ul style="list-style-type: none"> • Melanie Galloway discussed preparing a justification of why NRC requires additional dam breach parameters in the inundation calculation.
1/5/09	<ul style="list-style-type: none"> • Completed paper discussing the NRC vs. FERC breach parameters. • Met with DE on the draft response letter, breach widths, and the JCO. <ul style="list-style-type: none"> ◦ Discussed not stating breach parameters in the response letter. ◦ Nobody knew the FERC rationale for the 575-ft breach width for Jocassee Dam.
1/6/09	<ul style="list-style-type: none"> • Melanie Galloway met with Pat Hiland (this is hearsay) <ul style="list-style-type: none"> ◦ Discussed breach parameters for Jocassee. ◦ Discussed the possibility of issuing a DFI (??)
1/7/09	<ul style="list-style-type: none"> • Jeff Mitman was added to the team from DRA. • Fernando Ferrante to work with Jim Vail on the dam failure database. • Commissioner Lyons scheduled to visit site in February 2009.
1/8/09	<ul style="list-style-type: none"> • Melanie Galloway with other SES on visit to Oconee and Jocassee sites.

Oconee Timeline

Date	Summary of Events
1/9/09	<ul style="list-style-type: none"> • Melanie Galloway wanted overtopping to be considered for dam failure – asked Ken See to write a paragraph on the selection of breach parameters. • Melanie asked Fernando to drop out of training to work on the Oconee flood issue.
1/12/09	<ul style="list-style-type: none"> • Meeting with DORL, DE, Region II, Oconee Resident. <ul style="list-style-type: none"> ◦ Discussed the SES trip made on 1/8/09. ◦ New action items created to look into orders, CAL, DFI, arbitration, etc. ◦ Need to finalize JCO. ◦ Perform seismic evaluation. ◦ Do overtopping analysis. ◦ Prepare for meeting with Eric Leeds and Jim Wiggins for 1/14/09. • Allen Howe (and John Stang) concern that we are out of process – Melanie Wong asked Jon Thompson to document this.
1/26/09	<ul style="list-style-type: none"> • Antonios Zoulis added to the team from DRA to look into backfit analysis and recreate LIC-504. • Meeting with DORL, DE, Region II, and site Resident. <ul style="list-style-type: none"> ◦ Discussed the ET meeting. <ul style="list-style-type: none"> ▪ Discussed the JCO. ▪ Update of R.G. 1.59. ▪ Developing an order. ◦ Duke attorneys looking to defend an order. ◦ Discussed the meeting with FERC. <ul style="list-style-type: none"> ▪ Steep slope of abutments can limit break size. ▪ Largest break size and shortest time is not necessarily the worst-case. • Meeting with Melanie Galloway <ul style="list-style-type: none"> ◦ Re-open backfit. Melanie to contact DPR for Brian Richter's time. ◦ Fernando Ferrante working on developing definitions from the ANSI standard. ◦ Further rewrite of the IN for Jim Vail.
1/27/09	<ul style="list-style-type: none"> • Call between DRA and Duke (Oconee site and Headquarters PRA) over the data used for the dam failure frequency calculation.
2/3/09	<ul style="list-style-type: none"> • Commissioner Lyons visit to the Oconee and Jocassee sites.
2/5/09	<ul style="list-style-type: none"> • Meeting with SES on Oconee (no information on results). • Meeting with DPR and DRA on the IN <ul style="list-style-type: none"> ◦ Discussed DPR concerns over the use of data. • Fernando Ferrante discussions with Rex Wescott in NMSS on dam failure and R.G. 1.59. • DRA to produce the adequate protection backfit documented evaluation done.
2/9/09	<ul style="list-style-type: none"> • Meeting with DE, DORL, and DPR. <ul style="list-style-type: none"> ◦ DORL to put together communication plan. ◦ Discussed B.5.b. alternatives.
2/10/09	<ul style="list-style-type: none"> • Meeting between DRA and DPR on re-opening backfit. • Melanie Galloway tasked DRA to prepare a history of the Oconee flood issue. • SES meeting with Jack Grobe and DRA, DE. <ul style="list-style-type: none"> ◦ DE wishes to consider the FERC 575-ft inundation study break size.

Oconee Timeline

Date	Summary of Events
2/17/09	<ul style="list-style-type: none"> Ken See review of FERC PMP calculation found discrepancy on not having a pre-emptive rainfall which would saturate the soil and change the results.
2/20/09	<ul style="list-style-type: none"> DRA sent backfit documented evaluation to OGC for review.
2/24/09	<ul style="list-style-type: none"> DRA discussions at Oconee site regarding Duke proposed procedure on SSF failure.
2/26/09	<ul style="list-style-type: none"> DRA tour of Jocassee Dam site.
3/4/09	<ul style="list-style-type: none"> DRA meeting with OGC for further guidance on adequate protection.
3/5/09	<ul style="list-style-type: none"> DORL has response to Duke's 50.54(f) response. Duke sent their guidance for shutting down on flood failure of the SSF (EM5.3) for review.
3/6/09	<ul style="list-style-type: none"> DRA reviewed timeline Jack Grobe prepared for commissioners during the RIC.
3/9/09	<ul style="list-style-type: none"> Meeting with DE and DORL. <ul style="list-style-type: none"> Response letter to Duke is being rewritten by Jack after extensive comments.
3/16/09	<ul style="list-style-type: none"> DRA comments on Duke's guidance for flood.
3/23/09	<ul style="list-style-type: none"> Melanie Galloway initial non-concurrence package to the response letter to Duke.
3/26/09	<ul style="list-style-type: none"> Further comments from Region II and site Residents to Duke's guidance on SSF flood.
3/30/09	<ul style="list-style-type: none"> Comments to Duke guidance formally sent out.
4/1/09	<ul style="list-style-type: none"> Melanie Galloway rewrote the IN, again.
4/6/09	<ul style="list-style-type: none"> Formally sent backfit documented evaluation to OGC for Cathy Marco and Kimberly Sexton to review. Meeting with DE and DORL. <ul style="list-style-type: none"> Duke extended the date of their meeting to 5/1/09. USBR will review the flood analysis but, won't be immediately available due to internal workload.
4/20/09	<ul style="list-style-type: none"> Meeting with DE, DORL, and Region II <ul style="list-style-type: none"> Discussed the USBR contract. Discussion of comments to licensee's proposed procedure EM5.3.
4/23/09	<ul style="list-style-type: none"> Meeting between OGC (Kimberly Sexton), DE (Dave Skeen), DRA. <ul style="list-style-type: none"> Discussed the adequate protection documented evaluation. OGC felt that overtopping and seismic can not be used for an adequate protection argument since they are natural phenomena which are part of licensing basis. OGC required that any information for a backfit be "new" and "significant". Kimberly to speak with Geary Mizuno on definitions.
4/27/09	<ul style="list-style-type: none"> Duke sent advance copy of the HEC-RAS report. Melanie Galloway call with OGC (Cathy Marco) regarding the backfit documented evaluation. <ul style="list-style-type: none"> Melanie reported that Cathy agreed that overtopping and seismic failures can be included in the evaluation.

Oconee Timeline

Date	Summary of Events
4/29/09	<ul style="list-style-type: none">• Additional email comments from OGC (Kimberly Sexton) on the backfit documented evaluation.<ul style="list-style-type: none">○ Reiterated the view that overtopping and seismic failures cannot be considered for the documented evaluation.○ Geary Mizuno gave her 4 points which need to be discussed in the backfit documented evaluation.
5/1/09	<ul style="list-style-type: none">• DORL prepared revised draft letter to Duke.• Initial DRA review of Duke HEC-RAS analysis.
5/4/09	<ul style="list-style-type: none">• Oconee meeting with DE to discuss questions on HEC-RAS analysis (not invited).
5/5/09	<ul style="list-style-type: none">• Phone call with Duke, DORL, DE (not invited).
5/7/09	<ul style="list-style-type: none">• Met with NRO (Chris Cook) on HEC-RAS review questions.
5/11/09	<ul style="list-style-type: none">• Meeting with Duke at HQ.<ul style="list-style-type: none">○ Duke will present only the initial phase of HEC-RAS runs done to benchmark the 1992 FERC inundation study.○ Jack Grobe reiterated the NRC position that this is an adequate protection and not a PRA issue.○ Duke had not done any sensitivity calculations to vary breach parameters.○ Duke argued that NRC in the past did not cite Yankee-Rowe on not having adequate protection against failure of the Harriman Dam as a precedent.○ Discussed lumped answers to the HEC-RAS analysis questions due to time constraints.
5/12/09	<ul style="list-style-type: none">• Post-mortem meeting with DE.<ul style="list-style-type: none">○ Duke told DE and DORL that they will do sensitivity calculations.○ FERC questions and comments will be filtered through NRC.○ DE will assemble an independent team made up of DE personnel and Rex Wescott from NMSS.○ The question of adequate protection will be pursued first.○ USBR contract starts on 5/15/09.