
From: Crew, James F.
Sent: Tuesday, September 28, 2010 12:51 PM
To: Abernethy, Damon Lee; Adams, Jennifer; Addison, Joe; Aehnlich, Paul; Allen, Bob; Allen, John C.; Allinder, Pres; Allison, Eugene B., Jr.; Allred, Frances; Anckersen, Bonnie; Anckersen, Jim; Anderson, Dave; Armour, P.J.; Arnold, Peter; Atkins, Brian; Bain, Jim; Bain, Jim; Baker, Greg; Barnes, Tommy; Barnes, Woodrow; Barr, Brian; Bayne PhD, David R.; Beasley, Byron; Beason, Jeffrey A.; Beyer, Walter (Richie); Boone, Kenneth S.; Borden, Charles; Bowden, Matthew W.; Bowler, Stephen; Brantley, Larry; Bronson, Dick; Brown, Bruce P.; Brown, Clemie; Brown, Elizabeth; Brown, William; Browne, Charles A. & Catherine; Brownell, Prescott; Burke, Terry; Burks, Bo; Bush, Kristi; Byars, Gina Marie; Bynum, Jerry; Byram, Jim (Balch); Campbell, Ann; Campbell, Matt; Carroll, Wayne; Caverno, Don; Celestine, Bryant; Clements, Fran; Clements, Tom; Cofield, Jim; Cole, Katie; Coley Jr., Thomas L.; Commander, Dave; Como, Joanne; Cook, Stan; Couch, Carl; Creamer, Allan; Crum, David; Cunningham, Jesse; Currie, David; Curtis, J. Clay; Darwin, Charles; Davenport, Gene; Davis, Paul; DeLamar, Joyce; Denton, Will; Devries, Dennis; Dinan, Mark; Downes, Mary; Dozier, Thomas; Dukes Jr., Dyonius "Buck"; Duncan, Jeff; Dunn, Johnny; Dunnivan, Don; Edel, Judson; Edel, Marian; Edge, William; Ellis, Janet S.; Embry, Olice; Emerson, Ralph & Bobbie; Eubanks, Mike; Fang, Xing; Faulk, Joe; Fincher, Travis; Fitch, Robert Chadwick; Fleming, Amanda; Forehand, Steve; Fork, Penny; Franz, Charles; Freeman, Wayne; Freind, James L.; Fuller, Edie; Fuller, Mark; Futral, Thomas; Gardner, William S.; Gardner, Davis & Georgia; Glasier, John; Godfrey, Mike (Environmental); Goodman, Chris; Graham, Betty Carol; Grant, Rob; Greene, Chris; Griffin, Marshall D.; Grogan, John D.; Hamilton, Janice; Hancock, James (Balch); Hanks, Rhett; Harper, Bill; Harper, Don; Hathorn, James; Hathorn, Stacye; Hawkins, Don; Hayes, James Brian; Haynes, William K.; Hedgecock, Scott; Heinzen, Dave; Henderson, Scott; Hicks, Phillip; Hill, Amanda; Hopson, Warren H.; Horn, George F.; Houston, Rob; Howard, Jim; Jacobs, Jimmy; James, Maurice; Jehle, Lucy; Jenkins, J. T.; Jobsis, Gerrit; Johnson, Bill; Johnson, Calvin; Johnson, Margaret; Johnston, Dow; Johnston, Dow; Jones, William (Bill); Kelly, Pat; Kennelly, Jeff & Deb; Kensler, Michael; Killingsworth, Don; Krotzer, Steve; Lamberth, Tom; Landers, Jim; Lanier, Jimmy; Laporte, Cindy; Lawrence, Edward & Anita; Lawson, Emmett; Leep, Jeff; Leppert, Patricia; Leslie, Fred; Lewis, Elwilda; Liesch, Dale; Littlepage, Tom; Lochamy, James S.; Long, Francis & Edwin; Lovett, Barry K.; Lowry, Cindy; Lowry, Cindy; Lowry, Ramon; Lynch, Tom; Lyons, Jim and Barbara; MacAllister, Bill; MacAllister, Ken; MacAllister, Pam; Mann, Michael; Martin, George A.; Mason, Sally; McCauley, Roy; McClellan, Don; McCoy, Ellen; McDaniel, Pamela J.; McIndoe, Jim; McVicar, Ashley M; Mealing, Henry; Milam, Keith; Mims, Bill; Moody, Gary; Morgan, Buddy; Morgan, John; Morris, Bob; Mullican, J. Carey; Nichols, Nick; Nigh, Debra; Oakley, Mike; Ogburn, Chuck; Parker, Susan; Parker, Terry; Pate, Viki J.; Patterson Jr., J.W. (Bill); Pawlowski, Mark; Pearce, Karen; Pearson, Bill; Peeples, Alan L.; Peevy, Mark; Phillips, Trip; Pick, Matt; Pollard, Ray; Powell, Jeff; Price, Kim; Prince, Bobby; Ragsdale, Clay; Redding, Al; Reeves, Earl; Reid, Mitch; Rhinehart, Greg; Rice, Matt; Rich, Gwen; Rider, Steve; Robinson, Jim; Robinson, Mike; Roton, Ray; Rush, Mimi Leisy; Saidla, Janice; Saidla, John; Sailors, Jerry; Sammons, Steven; Scardina, Carl; Schaeffer, Kelly; Seebach, John; Seesock, Wendy; Anderegg, Angela Segars; Sellers, Douglas C.; Sewell, Wayne; Shaw, Chad; Shell, C. Wayne; Shell, Sandra N.; Shelton-Nix, Erica; Sheppard, Andrew R.; Silliman, R. Todd; Singley, Chuck; Sisk, Lynn; Smith, Charles "Sut"; Smith, R. Jay; Smith, Rita; Smith, Sheila C.; Smothers, Jim; Speaks, Steven; Spicer, Tom; Spratling, Robert; Stearns, Jackie; Stevenson Jr., Walter; Stover, Charles M.; Sumerlin, Arthur Lamar; Sumner, Chuck; Sznajderman, Michael; Takats, Judy (home); Takats, Judy (work); TerHaar, Monte; Thames, John; Thompson, Carl; Thornton, Reuben; Townsend, Lee D.; Triplett, John; Tuggle, Larry; Turner, Rick; Twigg, Robert H.; Uhrin, George; Unger, Sherry; Wagoner, Marvin; Waites, David G.; Waites, Jody; Walker, Charles; Walker, Ronda; Walker, William P.; Wilson, Alan; Winsor, David; Wishum, Tim; Woodruff, Cosby; Woodsmall, Gary K.; Wooten, Harry; Wyatt, Christopher Wayne; Young, Barbara; Zorn, George; O'Mara, Courtenay R.

Subject: Martin Relicensing - Multi-Criteria Decision Analysis Tool

Dear Martin Stakeholders,

At the Updated Study Report Meeting in Alex City on September 14th, we indicated that a general description of the decision analysis tool we are utilizing would be provided for your review prior to our October 13th meeting at Children’s Harbor. Attached is the summary description paper entitled “Using a Multi-Criteria Decision Analysis (MCDA) for Evaluating Operational Alternatives at the Martin Dam Hydroelectric Project.” Also attached is the agenda for the October 13th meeting. **Please remember to RSVP no later than October 6th to Viki Pate at <mailto:vjpate@southernco.com> or 205-257-2211.**

Thank you for your continued participation in the Martin relicensing process.



Final MCDA



2010-10-13

summary to Stakeholders MCDA Meeting

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September 28, 2010

USING A MULTI-CRITERIA DECISION ANALYSIS (MCDA) FOR EVALUATING OPERATIONAL ALTERNATIVES AT THE MARTIN DAM HYDROELECTRIC PROJECT

Background

As part of the Martin Dam Project (FERC No. 349) relicensing process, many stakeholders requested that Alabama Power Company (Alabama Power) investigate the feasibility of changing the flood control guide curve for the Martin reservoir. In response to these requests, Alabama Power conducted a series of studies that evaluated an increase in the winter pool elevation in increments of 1-foot from 481 ft mean sea level (msl) to 486 ft msl (i.e., 482, 483, 484, 485, and 486 ft msl) as well as extending the summer pool level in the shoulder seasons (raise Lake Martin to full pool earlier in the Spring and maintain full pool into the early/mid fall). These analyses were performed so that Alabama Power and its stakeholders could consider the effects of any proposed changes and could include these effects and the associated protection, mitigation and enhancement measures in the Preliminary Licensing Proposal (PLP) and final license application.

The Challenge – Making a Decision

There are many methods for making a decision in complex, multi-faceted projects including “Ad Hoc,” Cost-Benefit Analysis (CBA), Comparative Risk Assessment (CRA), and each of these methods has strengths and weaknesses. Alabama Power has selected a process called “Multi-Criteria Decision Analysis” (MCDA) to evaluate the 24 potential flood control guide curve alternatives (see Table 1-1). The MCDA for the Martin Project utilizes the pertinent data from the 22 study reports (see Table 1-2 at the end of this document for the list of study reports) and the input of various stakeholder groups. This paper provides an overview of the MCDA and how it will be used in the Martin relicensing process.

The purpose of an MCDA is to aid in the evaluation and selection of a preferred course of action among numerous alternatives based on multiple criteria. It is a mathematical tool that provides a systematic approach for the comparison of alternatives involving both quantitative (e.g., number of days, costs, etc.) and qualitative data (e.g., “good” or “bad”). MCDA identifies conflict areas and highlights areas of agreement through a transparent process. It can also accommodate disparate datasets. The MCDA has four primary strengths:

- creates a systematic process for analyzing discrete Multi-Variate Decisions or alternatives;
- creates a Standard Scoring (Ranking);
- creates a means of documenting decisions; and
- facilitates an iterative process.

Table 1-1: Alternatives (including Baseline) for Changing the Flood Control Guide Curve at the Martin Project

		Alternatives																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Higher Winter Pool	Early Spring							X	X	X	X	X	X							X	X	X	X	X	X
	Existing Base	X						X						X						X					
	1		X						X						X						X				
	2			X						X						X						X			
	3				X						X						X						X		
	4					X						X						X						X	
	5						X						X						X						X
	Fall Extension													X	X	X	X	X	X	X	X	X	X	X	X

- 1 Baseline
- 2 1 ft winter
- 3 2 ft winter
- 4 3 ft winter

- 5 4 ft winter
- 6 5 ft winter
- 7 early spring
- 8 early spring - 1 ft winter
- 9 early spring - 2 ft winter
- 10 early spring - 3 ft winter
- 11 early spring - 4 ft winter
- 12 early spring - 5 ft winter
- 13 fall extend
- 14 fall extend - 1 ft winter
- 15 fall extend - 2 ft winter
- 16 fall extend - 3 ft winter
- 17 fall extend - 4 ft winter
- 18 fall extend - 5 ft winter
- 19 early spring & fall extend
- 20 early spring & fall extend - 1 ft winter
- 21 early spring & fall extend - 2 ft winter
- 22 early spring & fall extend - 3 ft winter
- 23 early spring & fall extend - 4 ft winter
- 24 early spring & fall extend - 5 ft winter

Where has the MCDA been used?

The MCDA has been utilized since the early 1990s in a variety of applications, including hydroelectric projects. For example, an MCDA process was used in the assessment of salmon habitat and power generation on the Columbia River. The National Park Service also used the MCDA to evaluate operational alternative impacts to the Glen Canyon National Park. In the southeast, Kleinschmidt used an MCDA to evaluate 12 guide curve alternatives on generation, recreation, pond control and habitat for a hydropower project owned and operated by South Carolina Electric & Gas.



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Other applications include:

- Environmental Projects (EPA, water, air quality)
- Forestry
- Health Care
- Waste water and boundary water issues

Goals for the Martin MCDA

- Simplify and compile results for all alternatives
- Evaluate criteria with a standardized scoring approach (1-5 system)
- Consider variable criteria weights for groups based on stakeholder input
- Develop an objective and defensible basis for selecting 2 or 3 preferred alternatives that will be further evaluated with respect to potential protection, mitigation and enhancement measures.

Stakeholder Input and Next Steps

All Martin relicensing stakeholders are invited to meet on October 13, 2010 at Children's Harbor to discuss the MCDA tool and its use for the Martin Project. Alabama Power will also facilitate small group meetings, organized by stakeholder interests (agencies, upstream interests, downstream interests, NGOs, etc.), to get input on how different group(s) would rank the major criteria in the tool. More detail of the MCDA process will be provided at the meeting.

Literature Cited

http://www.epa.gov/cyano_habs_symposium/monograph/Ch35_AppA.pdf



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Table 1-2: Martin Study Reports

<i>Study Reports</i>
<u>Martin Issue Group 1 (Fish and Wildlife)</u>
Study Plan 1: Migratory Fish- Tallapoosa Literature Review
Study Plan 2: Assessment of Fish Density and Species Composition Associated with Various Shoreline Types
Study Plan 3: Evaluation of Minimum Flows Downstream of Martin Dam
Study Plan 4: Fish Entrainment and Turbine Mortality
Study Plan 5: Rare, Threatened, and Endangered Species Surveys
Study Plan 6: Striped Bass Telemetry Study
Study Plan 7: Wildlife Management Program
<u>Martin Issue Group 2 (Water Quality and Quantity)</u>
Study Plan 8: Baseline Water Quality
Study Plan 9: Location of NPDES Permits on Lake Martin
Study Plan 10: Erosion and Sedimentation
Study Plan 11: Water Quantity, Water Use, and Water Withdrawals
<u>Martin Issue Group 3 (Project Operations)</u>
Study Plan 12(a): Rule Curve Change Modeling Analysis
Study Plan 12(b): Effects of a Rule Curve Change on Sedimentation Rates and Nuisance Aquatic Vegetation



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<u><i>Study Reports</i></u>
Study Plan 12(c): Effects of Rule Curve Change on Water Quality
Study Plan 12(d): Effects of a Rule Curve Change on Lake and Downstream Erosion
Study Plan 12(e): Effects of a Rule Curve Change on Federally Threatened and Endangered Species at the Martin Project and the Tallapoosa River below Thurlow Dam
Study Plan 12(f): Effects of a Rule Curve Change on Downstream Recreation
Study Plan 12(g): Effects of Raising Winter Pool Level and Increasing the Duration of Summer Pool on Lake Martin Recreation Use
Study Plan 12(h): Effects of Raising Winter Pool Level and Increasing the Duration of Summer Pool on Lake Martin Economic Indicators
<u>Martin Issue Group 4 (Shoreline Management)</u>
Study Plan 13: Shoreline Management Program
<u>Martin Issue Group 5 (Recreation)</u>
Study Plan 14: Recreation Plan
<u>Martin Issue Group 6 (Cultural Resources)</u>
Study Plan 15: Cultural Resources Programmatic Agreement (PA) and Historic Properties Management Plan (HPMP)

**ALABAMA POWER COMPANY
MARTIN RELICENSING**

**HARBOR LODGE CONFERENCE CENTER
1 OUR CHILDREN'S HIGHWAY
CHILDREN'S HARBOR, AL 35010
OCTOBER 13, 2010**



**Martin Project Relicensing
Multi-Criteria Decision Analysis Tool**

Meeting Purpose: To discuss the multi-criteria decision analysis tool being utilized to assist in the evaluation of the numerous proposed reservoir operational changes.

- | | |
|----------|---|
| 9:00 AM | Welcome – Jim Crew (Alabama Power) |
| 9:15 AM | Overview of MCDA Tool- Jon Quebemann (Kleinschmidt) |
| 10:30 AM | Break |
| 10:45 AM | In-depth MCDA discussion: Input Data, Major & Minor Criteria, Priority Rankings |
| 12:15 PM | Lunch |
| 1:00 PM | Small Group Discussions- Stakeholder Priority Rankings |
| 2:30 PM | Incorporation of Stakeholder Input |
| 3:00 PM | Wrap- Up and Next Steps |

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