SETTLEMENT AGREEMENT

This Settlement Agreement is entered into between Leon County (County) and the City of Tallahassee (City) to reflect their shared understanding and mutual commitments concerning the operation of the Jackson Bluff Dam (dam) on Lake Talquin and the Ochlockonee River.

1. The County and City concur and mutually understand that operating the dam in accordance with the Operation Protocol (Attachment 1), as approved by the Federal Energy Regulatory Commission (FERC) on January 7, 2010 (Attachment 2) is required by FERC. Prior to the commencement of construction, the City will perform the field verification activities identified in Attachment 1 to develop a gate operation plan for the Corn Hydro Electric Facility that results in post modification outflows that are equivalent to the pre-modification outflows for lake levels between Elevation 69.5 feet and Elevation 72.3 feet.

2. The City agrees to operate the dam in accordance with the Operation Protocol. The City additionally agrees to provide the County a copy of any proposed changes to that Operation Protocol prior to the submittal of any such proposed changes to FERC; the purpose of this is to afford the County an opportunity to review any such proposed changes and provide comments to the City, and ultimately comments to FERC, if deemed necessary.

3. The County agrees not to contest the issuance of permit No. 04-2009-006I, by the Northwest Florida Water Management District (District), to install a new auxiliary spillway structure on the dam. In that respect, the County agrees promptly to withdraw from participation in DOAH Case No. 10-1688 by the submission of a Stipulated Motion for Voluntary Dismissal.

LEON COUNTY, FLORIDA

Parwez Alam
County Administrator

Date 6/9/10

Herbert W. A. Thiele, Esq.
County Attorney

Date 6/9/10

CITY OF TALLAHASSEE

Lewis E. Shelley, for

James R. English, City Attorney

6/9/10

Date

CITY OF TALLAHASSEE

Anita Favors Thompson

Anita Favors Thompson, City Manager

6-8-10

Date

City of Tallahassee
Your Own Utilities

December 28, 2009

VIA ELECTRONIC DELIVERY – NO HARD COPY TO FOLLOW

Mr. Charles Wagner, Regional Engineer
Federal Energy Regulatory Commission
Office of Energy Projects
Division of Dam Safety and Inspections
Gwinnett Commerce Center
3700 Crestwood Pkwy NW
9th Floor
Duluth, GA 30096

Re: Corn Hydro Spillway Modifications – Proposed Operational Changes
Jackson Bluff Dam
P-2891, NATDAM No. FL00108

Dear Mr. Wagner:

As you are aware, the Florida Department of Environmental Protection (FDEP), Northwest Florida Water Management District (NWFWMD) and downstream residents have raised concerns about the small incremental (0.22 feet) rise in the downstream river at Crooked Road associated with the proposed spillway during 100-year and above flooding events. As we have discussed, the City has been working with Mead & Hunt to identify what, if any, operational or physical modifications could be utilized to eliminate the 0.22 feet rise resulting in the downstream river conditions not changing with the installation of the proposed spillway.

At this time, we are recommending that we pursue a floodgate operational change that will allow for there to be no changes in the downstream river levels as a result of the new spillway. Attached you will find a report prepared by Mead & Hunt that provides more detail on the proposed operational modifications.

In summary, the City would continue to operate the floodgates and units as we do now until the floodgates are 100% open. At the point in time the floodgates are 100% open, the lake will still be below 69.5 feet. Once the inflows exceed the outflows with the floodgates 100% open, the lake will begin to rise and at the time the lake level reaches 69.5 feet, and water begins to flow over the new spillway, we will begin to close certain floodgates. As the lake continues to rise, we will continue to manipulate certain floodgates in such a manner that the downstream flows will remain the same, as they would have been with the current design. The amount of floodgate manipulation will be dependent upon the amount of rise on the lake. Once the lake reaches 72.3 feet, we will begin to open the floodgates in a structured manner until such time at the gates return to 100% open.

Attachment 1

By implementing this operational modification along with the installation of the new spillway, the downstream river levels will remain unchanged as compared to the existing design, thus eliminating the 0.22 feet rise at the 100-year and above flood events. These operational modifications will result in a slight increase in the lake level, as compared to the new spillway without the operational modifications. However, the lake level rise with the operational modifications will be less than the existing design.

As you know, we are currently working with FDEP and NWFWMD on permits for the spillway project. We need to provide this information to them to be included in their analysis of the permit applications. I would appreciate anything you can do to provide us with a quick review and approval of these operational modifications and any feedback as to whether these are acceptable to FERC. Based on discussions with your staff, we are moving forward with informal discussions with FDEP and NWFWMD staff concerning these operational modifications with the caveat that these are pending FERC's approval.

Feel free to let us know if there are any questions that we can address on this information.

Yours truly,

Robert E McGarrah
Manager, Power Production
Electric Production Division

Attachments
cc: Gordon King
Karl Bauer
Yiying Xiong, Mead & Hunt

MEAD & HUNT

Designing the future

December 23, 2009

Mr. Robert McGarrah
City of Tallahassee
2602 Jackson Bluff Road
Tallahassee, FL 32304

Subject: Gate Operation Modification (Preliminary)
Jackson Bluff Hydroelectric Project
FERC Project No. 2891

Dear Mr. McGarrah:

It has been identified that the proposed auxiliary spillway at the Jackson Bluff Hydroelectric Project can potentially increase the downstream river stage at the Crooked Road developments by up to 0.22 feet. The maximum increase of 0.22 feet will occur at an inflow condition peaking at 65,500 cubic feet per second (cfs), which is equal to the 100-year flood at the project location. During the permitting process for the proposed auxiliary spillway, the Florida Department of Environmental Protection (FDEP) and the Northwestern Florida Water Management District (NWFWMD) indicated that this increase in the downstream river stage can add adverse impact to the downstream flooding condition; therefore, it was recommended that some remedy measures be explored to eliminate the increase in the downstream river stage.

The City of Tallahassee ("City") requested that Mead & Hunt, Inc. (Mead & Hunt) identify whether the gate operations under the proposed auxiliary spillway design could be modified to best match the existing spillway capacity when the lake level is between 69.5 and 72.3 feet National Geodetic Vertical Datum (NGVD). The crest of the proposed auxiliary spillway is at elevation 69.5. The crest of the existing emergency spillway is at elevation 72.3. The goal for the gate operation modification is to mimic the existing spillway-rating curve between elevations 69.5 and 72.3 so the downstream conditions would remain unchanged after the construction of the proposed auxiliary spillway.

Mead & Hunt has completed this review and identified that there is a means by which the gate operations can be modified to allow for the existing spillway capacity curve to be matched with the addition of the proposed auxiliary spillway. Outlined below are the results of this review and a brief discussion of the proposed gate operation modification.

With the proposed auxiliary spillway design, the total spillway capacity is increased compared to the existing dam configuration when the reservoir level is between 69.5 and 72.3. In order to reduce the spillway capacity to match the existing capacity, gate openings were adjusted in the rating curve

Mead & Hunt Inc. 6501 Watts Road Madison Wisconsin 53719-2700
608 273 6380 fax 608 273 6391 www.meadhunt.com

calculation to allow orifice flow to occur through some of the existing floodgates. The nappe depth[1] for free weir flow at the floodgates was calculated at many potential gate opening locations. Before the lake level reaches the auxiliary spillway crest elevation of 69.5, the proposed spillway capacity matches the existing, and, therefore, no adjustment to the gate openings would be required to reduce flow. Based on the modeling performed as a part of the proposed spillway design, the gates would be fully open prior to the lake reaching 69.5 feet. Once the lake level rises above elevation 69.5, the openings of some of the gates would be adjusted such that the bottom of the gate is below the calculated nappe depth and orifice flow would form. These gates would be closed farther as the lake level rises from 69.5 to 72.3. The difference in spillway capacity between the proposed auxiliary spillway with gate operational modifications and the existing dam ranges from 3 to 466 cfs. This difference is considered negligible as it is less than one percent of the 100-year flood of 65,500 cfs. When the lake level rises above elevation 72.3, these gates would be gradually opened to their full open position to accommodate more flow. A summary table depicting the proposed gate operations sequence is attached, as well as the calculation sheet that Mead & Hunt has developed.

Please keep in mind that the attached gate opening sequence was developed based on best available data and theoretical calculations. We recommend that field-measurements be performed to verify the nappe profile. Following verification measurements, the gate opening sequence can be refined to reflect the results of the data collected, if needed.

Please feel free to contact me if you have any questions regarding this letter or any of the attachments.

Sincerely,

MEAD & HUNT, Inc.

Yiying Xiong, PE
Attachments

cc: Mr. Karl Bauer, City of Tallahassee

[1] The nappe depth is the water depth on top of the spillway.

JACKSON BLUFF GATE OPERATION MODIFICATION (PRELIMINARY)

Revised December 22, 2003

Attachment 6
Page 9 of 11

EXISTING

Controlled Spillway (Tainter Gates)					
ASSUMED DESIGN HEAD	18.5 feet	WEIR BOTTOM	18	18	feet(ngvd)
CREST ELEVATION	52 feet (ngvd)	WEIR HEIGHT	34	34	feet
CREST LENGTH	175 feet	U/S FACE SLOPE	1.02	1.03	
GATE PIVOT ELEVATION	58.5 feet	P/Hd	1.83	1.83	
NUMBER OF BAYS	7	C'	3.83	3.83	
CREST X COORDINATE	3.128	U/S FACE SLOPE CORREC.	0.96	0.96	
WEIR LENGTH EACH BAY	25 feet	PIER CONTRACTION COEF	0.02	0.02	
		ABUTMENT CONTR. COEFF	0.1	0.1	

Uncontrolled	Emergency Spillway	Fuse Plug Spillway	
CREST ELEVATION	72.3	74.3	feet(ngvd)
LENGTH OF WEIR	950	582	feet
DISCHARGE COE	2.8	3.1	[illegible]
CONCRETE CELL ELEVATION	80.3		feet

Normal Reservoir Elevation = [illegible] feet

PROPOSED

Auxiliary Spillway	
CREST ELEVATION	68.5 feet (NGVD 29)
DESIGN HEAD, H_d	4.60 feet
APPROACH HEIGHT, P	2.35 feet
WEIR COEFFICIENT FOR DESIGN HEAD, C_d	3.60 [6]
UPSTREAM SLOPE CORRECTION COEFFICIENT, $C_{inclined}/C_v$	1.015 [7]
SPILLWAY LENGTH, L	625 feet

Summary: The gate opening settings are preliminary based on best available data. Field testing will be required to verify [illegible]

RESERVOIR ELEVATION (NGVD) feet	HEAD OVER CREST feet	HEAD OVER GATE feet	H/H_d	C/C_d [1]	Effective Weir Length	C_{weir}	NUMBER OF GATES FULLY OPEN	WEIR FLOW cfs	POSITION OF GATE	x	y/H	NAPPE DEPTH AT GATE BOTTOM
68.00?	16.00	0.00	0.93?	0.973	187.90	3.79	7	40775				
68.50?	16.50	0.00	0.97?	0.979	187.74	3.81	7	42844	3.272	[illegible]	[illegible]	[illegible]
69.00?	17.00	0.00	0.97	0.983	187.52	3.82	7	44903	3.282	[illegible]	[illegible]	[illegible]
69.50?	17.50	0.00	0.99	0.988	187.3	3.84	7	47000	3.292	[illegible]	[illegible]	[illegible]
69.00?	17.00	4.00	0.99	0.987	142.64	3.44	6	40333	3.304	[illegible]	[illegible]	[illegible]
69.20?	17.20	4.70	0.81?	0.988	142.92	3.31	6	40604	3.316	[illegible]	[illegible]	[illegible]
69.40?	17.40	4.80	0.91	0.984	142.80	3.45	6	41282	3.328	[illegible]	[illegible]	[illegible]
69.60?	17.60	4.90	0.92	0.988	142.61	3.45	6	41827	3.326	[illegible]	[illegible]	[illegible]
70.00	18.00	5.00	0.92	0.990	142.6	3.45	6	45194	3.326	[illegible]	[illegible]	[illegible]
70.10	18.10	5.10	0.83	0.990	114.404	3.33	5	35164	3.328	[illegible]	[illegible]	[illegible]
70.20	18.20	5.20	0.83	0.993	110.448	3.34	5	35464	3.328	[illegible]	[illegible]	[illegible]
70.30	18.30	5.30	0.84	0.977	115.472	3.43	5	35770	3.328	[illegible]	[illegible]	[illegible]
70.40	18.40	5.40	0.84	0.982	84.112	3.44	4	29843	3.329	[illegible]	[illegible]	[illegible]
70.50	18.50	5.50	0.85	0.983	84.06	3.46	4	29027	3.335	[illegible]	[illegible]	[illegible]
70.60	18.60	5.60	0.86	0.984	84.048	3.47	4	23172	3.323	[illegible]	[illegible]	[illegible]
70.70	18.70	5.70	0.86	0.965	83.734	3.47	3	21636	3.323	[illegible]	[illegible]	[illegible]
70.80	18.80	6.00	0.90	0.983	83.734	3.47	3	22011	3.342	[illegible]	[illegible]	[illegible]
70.90	18.90	6.30	0.97	0.950	83.709	3.47	3	27183	3.329	[illegible]	[illegible]	[illegible]
71.00	19.00	9.00	0.87	0.997	68.68	3.48	3	22378	3.377	[illegible]	[illegible]	[illegible]
71.10	19.10	6.00	0.98	0.997	83.657	3.48	3	22566	3.397	[illegible]	[illegible]	[illegible]
71.20	19.20	7.20	0.98	0.998	81.424	3.46	3	22743	3.409	[illegible]	[illegible]	[illegible]
71.30	19.30	7.70	0.98	0.999	84.544	3.49	3	22977	3.409	[illegible]	[illegible]	[illegible]
71.40	19.40	8.40	0.99	0.999	84.548	3.43	3	23112	3.407	[illegible]	[illegible]	[illegible]
71.50	19.50	8.40	1.00	1.000	68.54	3.44	3	23394	3.543	[illegible]	[illegible]	[illegible]
71.60	19.60	8.60	1.01	1.001	68.512	3.43	3	23404	3.582	[illegible]	[illegible]	[illegible]
71.70	19.70	8.10	1.04	1.001	68.484	3.46	3	23876	3.427	[illegible]	[illegible]	[illegible]
71.80	19.80	8.40	1.02	1.002	68.458	3.40	3	23854	3.444	[illegible]	[illegible]	[illegible]
71.90	19.90	8.80	1.02	1.003	52.428	3.40	3	24015	3.724	[illegible]	[illegible]	[illegible]
72.00	20.00	10.20	1.03	1.003	68.4	3.40	3	24263	3.768	[illegible]	[illegible]	[illegible]
72.10	20.10	10.60	1.03	1.004	68.373	3.31	3	24132	3.850	[illegible]	[illegible]	[illegible]
72.20	20.20	11.10	1.04	1.005	68.344	3.31	3	24811	3.854	[illegible]	[illegible]	[illegible]
72.30	20.30	11.40	1.04	1.005	68.318	3.31	3	24961	4.055?	[illegible]	[illegible]	[illegible]
72.40	20.40	10.80	1.05	1.006	68.288	3.31	3	24507	3.658	[illegible]	[illegible]	[illegible]
72.50	20.50	10.50	1.06	1.007	68.26	3.37	3	25163	3.745	[illegible]	[illegible]	[illegible]
72.60	20.60	10.10	1.06	1.008	68.232	3.42	3	25314	3.648	[illegible]	[illegible]	[illegible]
72.70	20.70	9.70	1.06	1.008	68.204	3.52	3	25564	3.558	[illegible]	[illegible]	[illegible]
72.80	20.80	9.30	1.07	1.009	68.176	3.53	3	25756	3.433	[illegible]	[illegible]	[illegible]
72.90	20.90	8.90	1.07	1.010	67.148	3.53	3	25952	3.430	[illegible]	[illegible]	[illegible]
73.00	21.00	8.50	1.08	1.010	68.12	3.53	3	26145	3.363	[illegible]	[illegible]	[illegible]
73.10	21.10	8.10	1.08	1.011	68.092	3.43	3	26330	3.328	[illegible]	[illegible]	[illegible]
73.20	21.20	7.70	1.08	1.012	68.064	3.44	3	26534	3.289	[illegible]	[illegible]	[illegible]
73.30	21.30	7.30	1.09	1.012	68.036	3.44	3	26729	3.282	[illegible]	[illegible]	[illegible]
73.40	21.40	6.90	1.10	1.013	68.008	3.34	3	26926	3.370	[illegible]	[illegible]	[illegible]
73.50	21.50	6.50	1.10	1.014	67.98	3.34	3	27126	3.287	[illegible]	[illegible]	[illegible]
73.60	21.60	6.10	1.11	1.014	67.952	3.45	3	27318	3.299	[illegible]	[illegible]	[illegible]
73.70	21.70	5.70	1.11	1.015	67.924	3.43	3	27510	3.328	[illegible]	[illegible]	[illegible]
73.80	21.80	5.30	1.12	1.016	165.408	3.45	7	64534	3.364	[illegible]	[illegible]	[illegible]
74.00	22.00	4.50	1.13	1.018	165.37	3.54	7	61339	3.420	[illegible]	[illegible]	[illegible]
74.20	22.20	3.70	1.14	1.018	165.232	3.38	7	66292	3.420	[illegible]	[illegible]	[illegible]
74.50	22.50	3.30	1.14	1.019	165.166	3.87	7	68805	3.420	[illegible]	[illegible]	[illegible]
74.80	22.80	3.01	1.15	1.020	165.1	3.87	7	60457	3.420	[illegible]	[illegible]	[illegible]
75.00	23.00	3.50	1.16	1.023	164.88	3.93	7	73497	3.420	[illegible]	[illegible]	[illegible]
76.00	24.00	4.30	1.20	1.029	164.44	4.00	7	77403	3.420	[illegible]	[illegible]	[illegible]
77.00	25.00	5.51	1.28	1.035	164	4.03	7	82535	3.420	[illegible]	[illegible]	[illegible]

RESERVOIR ELEVATION	GATE #1 OPENING G_1 (ft)	GATE #1 ORIFICE FLOW cfs	GATE #2 OPENING G_2 (ft)	GATE #2 ORIFICE FLOW cfs	GATE #3 OPENING G_3 (ft)	GATE #3 ORIFICE FLOW cfs	GATE #4 OPENING G_4 (ft)	GATE #4 ORIFICE FLOW cfs	GATE #5 OPENING G_5 (ft)	GATE #5 ORIFICE FLOW cfs	GATE #6 OPENING G_6 (ft)	GATE #6 ORIFICE FLOW cfs	GATE #7 OPENING G_7 (ft)	GATE #7 ORIFICE FLOW cfs
68.00?	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
68.50?	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
69.00?	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
69.50?	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
69.00? to 73.80 (46 rows)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	0	[illegible]	0
74.00	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
74.20	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
74.50	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
74.80	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
75.00	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
76.00	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0
77.00	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0	[illegible]	0

RESERVOIR ELEVATION	HEAD OVER AUXILIARY feet	H/H_d	$C_{inclined}/C_v$	C_{incl}	C_{design}	FLOW OVER AUXILIARY cfs	TOTAL FLOW W/ GATE OP cfs	TOTAL FLOW EXISTING cfs	DIFFERENCE FLOW W/GATE OP - EXISTING
68.00?	0.00	-				0	40775	40775	0
68.50?	0.00	-				0	42844	42844	0
69.00?	0.30	-				0	44903	44903	0
69.50?	0.00	-				0	47000	47000	0
69.00?	0.10	0.02	0.783	3.00	3.05	78	46625	47421	-463
69.20?	0.20	0.04	0.800	3.04	3.07	221	47497	47848	-433
69.40?	0.30	0.06	0.825	3.04	3.10	421	48265	44378	-183
69.60?	0.40	0.08	0.815	3.10	3.14	654	48172	48904	7
70.00	0.50	0.11	0.824	3.13	3.18	927	45376	45634	243
70.10	0.60	0.13	0.832	3.15	3.20	1237	46325	48509	-219
70.20	0.70	0.15	0.835	3.17	3.22	1556	50045	49908	47
70.30	0.80	0.17	0.843	3.20	3.25	1917	50108	50432	338
70.40	0.90	0.19	0.844	3.21	3.28	2270	60545	50984	-163
70.50	1.00	0.21	0.850	3.25	3.28	2722	51418	51309	113
70.60	1.10	0.23	0.860	3.27	3.32	3157	52106	51741	434
70.70	1.20	0.25	0.865	3.29	3.34	3615	53048	52183	-185
70.80	1.30	0.27	0.873	3.32	3.37	4117	52513	52625	-81
70.90	1.40	0.30	0.878	3.34	3.39	4620	53052	50684	-45
71.00	1.50	0.32	0.880	3.34	3.39	5144	53509	53012	-3
71.10	1.60	0.34	0.889	3.37	3.43	3718	54047	53034	30
71.20	1.70	0.36	0.897	3.38	3.44	4231	54575	54405	179
71.30	1.80	0.38	0.897	3.41	3.46	6802	54728	54654	-45
71.40	1.90	0.41	0.903	3.43	3.43	7523	55317	55394	35
71.50	2.00	0.43	0.910	3.46	3.51	4100	55778	55956	29
71.60	2.10	0.45	0.915	3.43	3.53	8840	58186	56306	-132
71.70	2.20	0.47	0.914	3.49	3.54	9652	58787	56603	184
71.80	2.30	0.49	0.920	3.50	3.55	10215	57344	57160	229
71.90	2.40	0.51	0.923	3.51	3.56	10820	57768	57578	183
72.00	2.50	0.53	0.927	3.52	3.58	11663	58232	58634	148
72.10	2.60	0.55	0.831	3.54	3.59	12430	59048	58485	152
72.20	2.70	0.56	0.835	3.55	3.61	13200	58300	58858	-58
72.30	2.80	0.60	0.842	3.57	3.61	13514	59373	59643	16
72.40	2.90	0.62	0.845	3.59	3.64	14430	61958	60544	1415
72.50	3.00	0.64	0.841	3.61	3.66	15031	63427	60570	2817
72.60	3.10	0.66	0.853	3.62	3.67	16834	66208	61334	4928
72.70	3.20	0.68	0.855	3.63	3.68	17585	66465	62026	6654
72.80	3.30	0.70	0.858	3.64	3.70	18274	70168	62713	7453
72.90	3.40	0.72	0.865	3.65	3.71	19375	72256	63406	8831
73.00	3.50	0.75	0.903	3.67	3.72	20106	74375	64147	10233
73.10	3.65	0.77	0.910	3.69	3.74	21081	76500	64625	11401
73.20	3.70	0.79	0.872	3.69	3.75	22013	76610	65473	12037
73.30	3.80	0.81	0.873	3.71	3.76	22342	80725	66407	14256
73.40	3.90	0.83	0.878	3.72	3.77	23308	82318	67281	15383
73.50	4.00	0.85	0.881	3.73	3.78	24033	84875	68153	16340
73.60	4.10	0.87	0.885	3.74	3.80	24833	87131	69785	17641
73.70	4.20	0.89	0.889	3.75	3.81	27060	88257	70155	19116
73.80	4.30	0.91	0.991	3.77	3.83	29116	84857	71040	23317
74.00	4.50	0.95	0.995	3.78	3.84	30224	97703	73214	24246
74.20	4.70	1.00	1.000	3.80	3.86	32420	100025	75685	22342
74.50	4.84	1.02	1.003	3.81	3.87	31503	102549	101577	872
74.80	5.00	1.07	1.008	3.83	3.89	33886	105433	104817	613
75.00	5.50	1.17	1.021	3.88	3.94	41994	114313	112579	735
76.00	6.50	1.38	1.044	3.96	4.01	53213	120546	122797	458
77.00	7.50	1.60	1.078	4.07	4.12	62911	152451	147943	4514

NOTES:

[1] Obtained from "Design of Small Dams", Bureau of Reclamation
[2] Obtained from "Hydraulic Design of Spillways", 1990, U.S. Army Corps of Engineers, Plate 3-4
[3] Obtained from "Hydraulic Design of Spillways", 1990, U.S. Army Corps of Engineers, Plate 3-11
[4] Computed using Equation 3-1, "Hydraulic Design of Spillways", 1990, U.S. Army Corps of Engineers
[5] For transition between the weir flow to orifice flow see "Hydraulic Design of Spillways", 1965, U.S. Army Corps of Engineers
[6] Design of Small Dams, p 370, Figure 9-23, Discharge coefficients for vertical-faced ogee crest, 288-D-2406
[7] Design of Small Dams, p 371, Figure 9-25, Discharge coefficients for ogee-shaped crest with sloping upstream face, 288-D-2411
[8] Design of Small Dams, p 371, Figure 9-24, Discharge coefficients for other than the design head, 288-D-2410
[9] Handbook of Applied Hydraulics, p. 20-4, Table 1
[10] Handbook of Applied Hydraulics, p. 20-2, Fig. 1
[11] See lookup table on "Upper Nappe Curve" sheet
[12] See lookup table on "Gate Position" sheet
* Columns highlighted in orange indicate that gate opening adjustment is NOT required, and columns highlighted in blue indicate that gate opening adjustment is required

[illegible]

JACKSON BLUFF DAM SPILLWAY GATE OPERATION MODIFICATION (PRELIMINARY)

Revised December 23, 2009

RESERVOIR ELEVATION feet (NGVD)	GATE #1 OPERATION GATE OPENING G_a (ft)	GATE # 2 OPERATION GATE OPENING G_b (ft)	GATE #3 OPERATION GATE OPENING G_c (ft)	GATE # 4 OPERATION GATE OPENING G_d (ft)	GATE # 5 OPERATION GATE OPENING G_e (ft)	GATE # 6 OPERATION GATE OPENING G_f (ft)	GATE # 7 OPERATION GATE OPENING G_g (ft)	TOTAL FLOW W/ GATE OP cfs	TOTAL FLOW EXISTING cfs	DIFFERENCE FLOW W/ GATE OP - EXISTING
68.50	15.0	15.0	15.0	15.0	15.0	15.0	15.0	42844	42844	0
69.00	15.0	15.0	15.0	15.0	15.0	15.0	15.0	44903	44903	0
69.50	15.0	15.0	15.0	15.0	15.0	15.0	15.0	47000	47000	0
69.60	15.0	15.0	15.0	15.0	15.0	15.0	15.0	46958	47424	-466
69.70	15.0	15.0	15.0	15.0	15.0	15.0	15.0	47497	47849	-352
69.80	15.0	15.0	15.0	15.0	15.0	15.0	15.0	48083	48276	-193
69.90	15.0	15.0	15.0	15.0	15.0	15.0	15.0	48712	48704	7
70.00	15.0	15.0	15.0	15.0	15.0	15.0	15.0	49376	48134	243
70.10	15.0	15.0	15.0	15.0	15.0	15.0	15.0	49356	49565	-211
70.20	15.0	15.0	15.0	15.0	15.0	15.0	15.0	50045	49998	47
70.30	15.0	15.0	15.0	15.0	15.0	15.0	15.0	50768	50432	336
70.40	15.0	15.0	15.0	15.0	15.0	15.0	15.0	50665	50868	-183
70.50	15.0	15.0	15.0	15.0	15.0	15.0	15.0	51418	51305	113
70.60	15.0	15.0	15.0	15.0	15.0	15.0	15.0	52198	51743	454
70.70	15.0	15.0	15.0	15.0	15.0	15.0	15.0	52048	52183	-135
70.80	15.0	15.0	15.0	15.0	15.0	15.0	15.0	52533	52625	-91
70.90	15.0	15.0	15.0	15.0	15.0	15.0	15.0	53022	53068	-46
71.00	15.0	15.0	15.0	15.0	15.0	15.0	15.0	53509	53512	-3
71.10	15.0	15.0	15.0	15.0	15.0	15.0	15.0	54047	53958	89
71.20	15.0	15.0	15.0	15.0	15.0	15.0	15.0	54575	54405	170
71.30	15.0	15.0	15.0	15.0	15.0	15.0	15.0	54789	54854	-65
71.40	15.0	15.0	15.0	15.0	15.0	15.0	15.0	55357	55304	53
71.50	15.0	15.0	15.0	15.0	15.0	15.0	15.0	55775	55755	20
71.60	15.0	15.0	15.0	15.0	15.0	15.0	15.0	56186	56208	-22
71.70	15.0	15.0	15.0	15.0	15.0	15.0	15.0	56767	56663	104
71.80	15.0	15.0	15.0	15.0	15.0	15.0	15.0	57348	57116	230
71.90	15.0	15.0	15.0	15.0	15.0	15.0	15.0	57766	57576	190
72.00	15.0	15.0	15.0	15.0	15.0	15.0	15.0	58202	58034	168
72.10	15.0	15.0	15.0	15.0	15.0	15.0	15.0	58646	58495	152
72.20	15.0	15.0	15.0	15.0	15.0	15.0	15.0	58900	58956	-50
72.30	15.0	15.0	15.0	15.0	15.0	15.0	15.0	59573	59562	10
72.40	15.5	15.5	15.5	15.5	15.5	15.5	15.5	61858	60044	1815
72.50	16.0	16.0	16.0	16.0	16.0	16.0	16.0	63937	60570	3367
72.60	16.5	16.5	16.5	16.5	16.5	16.5	16.5	66008	61378	4620
72.70	17.0	17.0	17.0	17.0	17.0	17.0	17.0	68085	62026	6059
72.80	17.5	17.5	17.5	17.5	17.5	17.5	17.5	70169	62703	7466
72.90	18.0	18.0	18.0	18.0	18.0	18.0	18.0	72258	63408	8851
73.00	18.5	18.5	18.5	18.5	18.5	18.5	18.5	74375	64147	10229
73.10	19.0	19.0	19.0	19.0	19.0	19.0	19.0	76500	64899	11601
73.20	19.5	19.5	19.5	19.5	19.5	19.5	19.5	78610	65673	12937
73.30	19.5	19.5	19.5	19.5	19.5	19.5	19.5	80725	66467	14258
73.40	19.5	19.5	19.5	19.5	19.5	19.5	19.5	82846	67281	15565
73.50	19.5	19.5	19.5	19.5	19.5	19.5	19.5	84973	68333	16640
73.60	19.5	19.5	19.5	19.5	19.5	19.5	19.5	87131	69285	17846
73.70	19.5	19.5	19.5	19.5	19.5	19.5	19.5	89269	70155	19114
73.80	19.5	19.5	19.5	19.5	19.5	19.5	19.5	94652	71040	23612
74.00	19.5	19.5	19.5	19.5	19.5	19.5	19.5	97763	73014	24749
74.20	19.5	19.5	19.5	19.5	19.5	19.5	19.5	100925	75083	25842
74.30	19.5	19.5	19.5	19.5	19.5	19.5	19.5	102548	101577	972
74.50	19.5	19.5	19.5	19.5	19.5	19.5	19.5	105853	104913	941
75.00	19.5	19.5	19.5	19.5	19.5	19.5	19.5	114313	113579	733
76.00	19.5	19.5	19.5	19.5	19.5	19.5	19.5	132666	132207	459
77.00	19.5	19.5	19.5	19.5	19.5	19.5	19.5	152457	147943	4514

NOTES:
1. Columns highlighted in orange indicate that gate opening adjustment is NOT required.
2. Columns highlighted in blue indicate that gate opening adjustment is required.
3. Gate openings are adjusted when reservoir level is between 69.5 and 72.3 in order to best match the existing capacity of the project.
4. Key elevations:
   Normal pool elevation: 68.5 feet-NGVD
   Proposed auxiliary spillway crest elevation: 69.5 feet-NGVD
   Existing emergency spillway crest elevation: 72.3 feet-NGVD
   Existing fuse plug crest elevation: 74.3 feet-NGVD
   Dam crest elevation: 77.0 feet-NGVD

Disclaimer: The gate opening settings are preliminary based on best available data. Field tests will be required to verify full gate openings and the nappe depth. Gate opening settings are subject to change after field test results are obtained.

X:\20147-00\09004\TECH\Gate operation modifications\Jackson Bluff gate operation modifications.xls

Attachment 6
Page 10 of 11

Attachment 6
Page 11 of 11

FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF ENERGY PROJECTS
DIVISION OF DAM SAFETY AND INSPECTIONS
ATLANTA REGIONAL OFFICE
3700 Crestwood Parkway – Suite 950
Duluth, Georgia 30096
(678) 245-3000

JAN 07 2010

In reply refer to:
P-2891
NATDAM No. FL00108
Jackson Bluff

Mr. Robert E. McGarrah
Manager, Power Production
City of Tallahassee
Electric Operations
2602 Jackson Bluff Road
Tallahassee, Florida 32304

Subject: Corn Hydro Spillway Modifications – Proposed Operational Changes

Dear Mr. McGarrah:

This acknowledges receipt of your December 28, 2009, letter submitting the proposed spillway operational changes for the Jackson Bluff Project No. 2891. The gate operation changes are reasonable and acceptable. We recommend performing field measurements to verify the nappe profile calculations. The gate operation sequence should be updated if the field measurements determined more accurate discharge values.

Your cooperation in dam safety matters is appreciated. If you have any questions, please contact Mr. Richard Martin at (678) 245-3071 or e-mail richard.martin@ferc.gov.

Sincerely,

Charles D. Wagner

Charles D. Wagner, P.E.
Regional Engineer

Attachment 2