

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 1-7056

Exam Date: July 10, 2013

1. Current Owner: US DEPT OF INTERIOR
BUREAU OF RECLAMATION
1150 N CURTIS RD STE 100
BOISE ID 83706-1234
(208) 378-5306
2. Accompanied by: E. Gail McGarry, Program Manager Water Rights Acquisition
Phone No: 208-378-5306
Address: PN-3100, Bureau of Reclamation Pacific Northwest Region, 1150 North Curtis Road, Suite 100
Relationship to Permit Holder: employee

This Beneficial Use Field Report was completed by Michele Edl and is primarily based on existing reports which were archived in the Dam Safety document library. Specifically, I reviewed IDWR's Record of Inspection of Dam from 1999, 2002 and 2008 for the Minidoka dam, which were written by C. Skinner, dam safety engineer stationed at IDWR's Southern Region Office.

I also referred to the USBR's Periodic Facilities Review 2008, the Comprehensive Facilities Review (2005 & 2012) and Standard Operation Procedures, Minidoka Dam (4/14/2011 revision) which are available in the Dam Safety library at IDWR's State office.

Additional generation and project-specific information was provided by E. Gail McGarry and from other USBR staff. No additional site visit was carried out.

3. **SOURCE**
SNAKE RIVER

TRIBUTARY
COLUMBIA RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use:

Existing SRBA decreed rights 1-217, 1-218, 1-4024, and 1-4025 total 5035 cfs. The combined hydraulic capacity of the two active turbines in the old powerhouse is approximately 2567 cfs. (867 cfs (unit #6) + 1700 cfs (unit #7)). Therefore the total decreed rate exceeds the capacity of the old powerhouse. A portion of power use authorized by the decreed rights has been shifted from turbines in the old, Minidoka powerhouse to turbines in the Inman powerhouse.

2. Other water rights with the same point of diversion:

For the reason stated in the paragraph above, a portion of decreed rights 1-217, 1-218, 1-4024, and 1-4025 are now being diverted through the penstocks for the Inman powerhouse.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

SNAKE RIVER L3 (NE1/4SW1/4)

Sec. 1, Twp 09S, Rge 25E, B.M.

CASSIA County

Method of Determination:

I found no record of GPS coordinates for either penstock intake. However, both the old and the new intake structures are visible in aerial photography. I compared photography available in the inspection and operation reports with aerial photography to determine the POD. I created the POD shape. The POD has been developed in a different location than the one listed in the permit. An amendment is needed before licensing.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: not applicable

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Uses:

Effective 3/29/2012, the Beneficial Use Examination Rules exempt on-stream, run-of-the-river, power generation from the volume reporting requirement. This hydroelectric facility may not qualify for that exemption. Although this is an on-stream project, it does not operate in run-of-river mode.

If a volume is required for this license, I recommend $3864 \text{ cfs} \times 365 \text{ days} \times 1.9835 = 2,797,000 \text{ AF}$

G. NARRATIVE/REMARKS/COMMENTS

Minidoka dam is a combined diversion, storage, and power structure. Minidoka re-regulates releases from American Falls Reservoir. Kaplan type turbines have a flexible range of operation. This project has some load following capability.

The original powerplant was constructed in 1909 upon the concrete buttress section of the dam and is located in gov t lot 3 (SENW) Twp 9 South, Rge 25 East. The original turbine-generator Units 1-5 have been retired and preserved as museum pieces. Units 6 and 7 have been refurbished and continue to operate in the original powerhouse.

This permit requests additional water for power use in a replacement powerplant which was completed in 1997. That replacement powerplant is now known as the Allen E. Inman Powerplant. The construction was funded by the Bonneville Power Administration who markets the hydroelectric power generated at Minidoka and other federal projects in the Pacific Northwest.

Term limit

Neither the IPUC nor the FERC have authority over this project.

I believe that there are existing long-term operation contracts or power agreements and a term limit tied to one of those contracts would be an option worth considering. However, lacking access to those agreements, the term limit condition will be based on the expected, 50-year lifespan of the generation equipment.

Subordination

Power production at Minidoka is not an incidental benefit from discharges for irrigation. According to the General Filling and Release Procedures, (see Standard Operating Procedures, Chapter IV-Reservoir Operation) powerplant operation is not subordinate to irrigation storage. During the irrigation spring and fall shoulder seasons, power is produced without reference to the reservoir's elevation or storage. Flows up to 5035 cfs, (the total rate authorized by the decreed rights 1-217, 1-218, 1-4024 and 1-4025), are directed through the powerplants from April 1- April 15 and from September 16-October 31.

The decreed rights for power use carry non-standard, subordination conditions. I will recommend that this license be issued with the current subordination condition and clarification of hydropower subordination at Minidoka will be needed.

Mitigation requirements

There is no formal minimum streamflow requirement at Minidoka. But as a result of the environmental assessment required for construction of the Inman Powerplant, Minidoka dam operation adheres to a program of spill releases. The spill are mitigation agreed to between the Idaho Fish and Game Department and the USBR.

Flow measurement

USGS station #13081500, Snake River nr Minidoka (at Howells Ferry) is maintained by Idaho Falls Office of the USGS. It is located approximately 1 mile downstream from the Minidoka Dam. Flow data from this station represents the total flow of the river. Without companion generation records, the flow data from this station is not sufficient to confirm beneficial use.

Turbine discharge readings are available from a SCADA (supervisory control and data acquisition) system. The data from that system is not publically available. Instantaneous readings are available from the Black Canyon Control Center or from the operation control room at Minidoka Dam.

Point of Discharge

Both turbines discharge back into the Snake River. The tailwater area of the old plant has been altered to accommodate discharge from the Inman powerhouse.

Storage

No storage for power is authorized either by this permit or by the existing decreed water rights for power use at Minidoka Dam. Minidoka Dam is a multipurpose facility. Storage is authorized through other rights.

The existing reservoir, Lake Walcott, extends approximately 26 miles up the Snake River, and has surface area of approximately 11,850 acres at reservoir pool elevation of 4245.0 ft. The dam impounds a reservoir containing 210,000 acre-feet. Both USBR and IDWR classify the Minidoka Dam as High Hazard. IDWR's Dam Safety has certified the Minidoka Dam to impound water to an elevation of 4245.0 ft. Unless revoked, the current impoundment certificate expires December 31, 2014.

Conditions

A condition of the permit requires that a measuring device be permanently installed and maintained as part of the diverting works. Accusonic flowmeter systems have been installed in the penstocks.

A local dam tender is available and onsite for only one shift each day. A SCADA system allows the facilities at Minidoka Dam to be operated remotely from the control room at the Black Canyon Dam.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

The turbine discharge data provided by Ms. McGarry indicates that the contemporary powerhouses can beneficially use 8899 cfs. 5035 cfs for power is already authorized through decreed rights: 1-217, 1-218, 1-4024, and 1-4025. Therefore, for this license I recommend 3864 cfs.

For a volume I recommend $3864 \text{ cfs} \times 365 \text{ days} \times 1.9835 = 2797000 \text{ AFA}$

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
POWER	1/01 to 12/31	3864 CFS	2797000 AFA
<u>Totals:</u>		3864 CFS	2,797,000 AFA

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name  Date 10/23/2013

Reviewer _____ Date _____



NOTE
Penstock stationing is along penstock centerline.

For Official Use Only/SENSITIVE



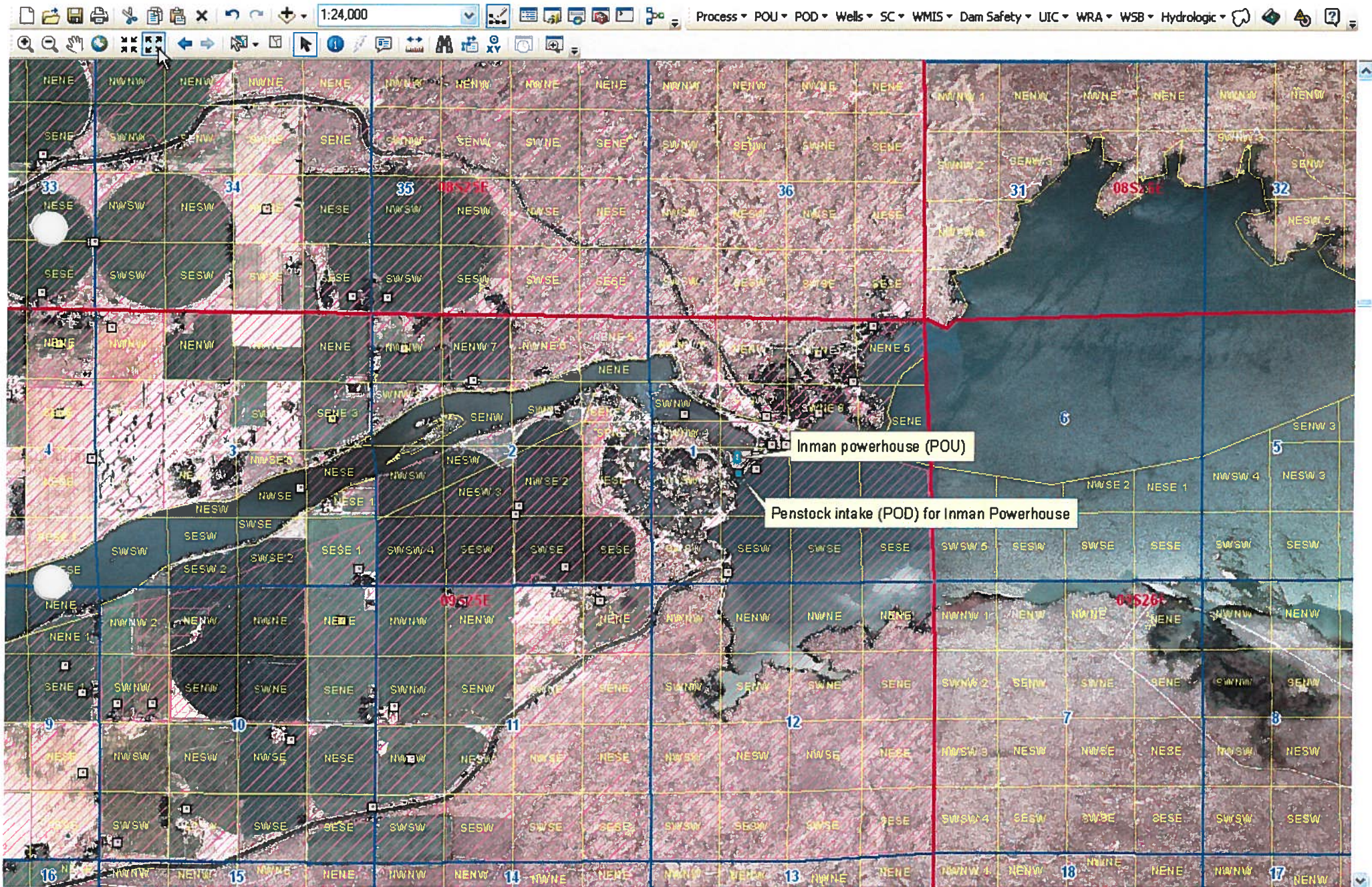
20 0 20 40 60
SCALE OF FEET
SECTION A-A

10 0 10 20 30
SCALE OF FEET
SECTION B-B, C-C, D-D, E-E, AND F-F

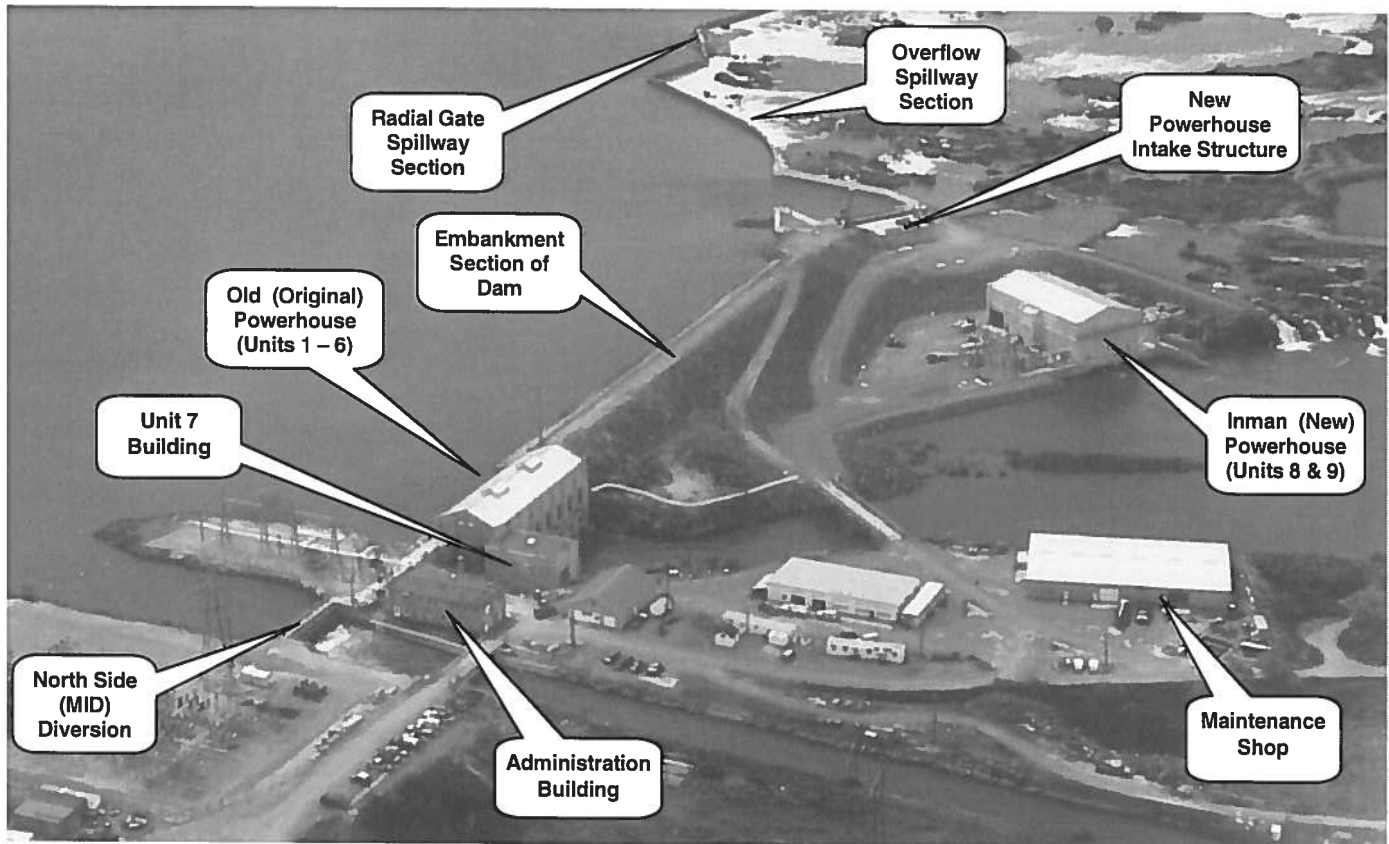
NOV 13 2011

10-1-92 D- PMR	ADDED SECTION N-M CORRECTED STA.
	ALWAYS THINK SAFETY
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION MINIDOKA PROJECT - IDAHO	
MINIDOKA REPLACEMENT POWERPLANT	
GENERAL PLAN	
SECTIONS	
DESIGNED JOHN R. BAALS	TECHNICAL APPROVAL PAUL M. RUCHTIG
DRAWN M. MINICK / N.L.B.	SUBMITTED IVYL G. TAYLOR
CHECKED MARK LEAVITT	APPROVED JOHN D. SMART
CHIEF, CIVIL ENGINEERING DIVISION	
DENVER, COLORADO	MAY 1, 1992
SHEET 1 OF 2	17-D-2193

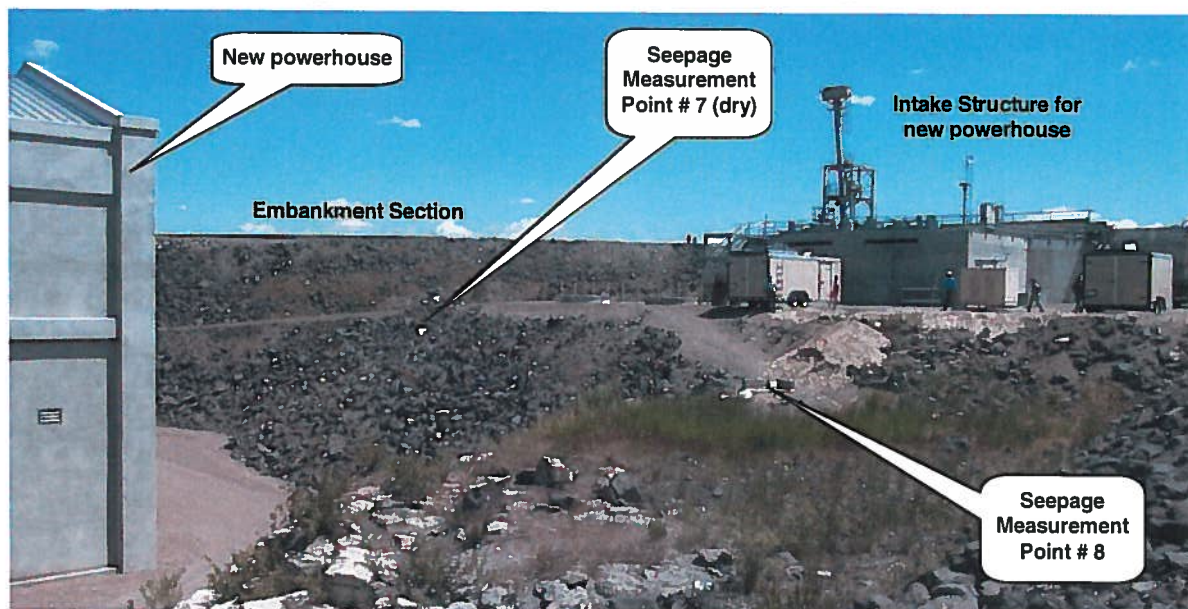
April 2003



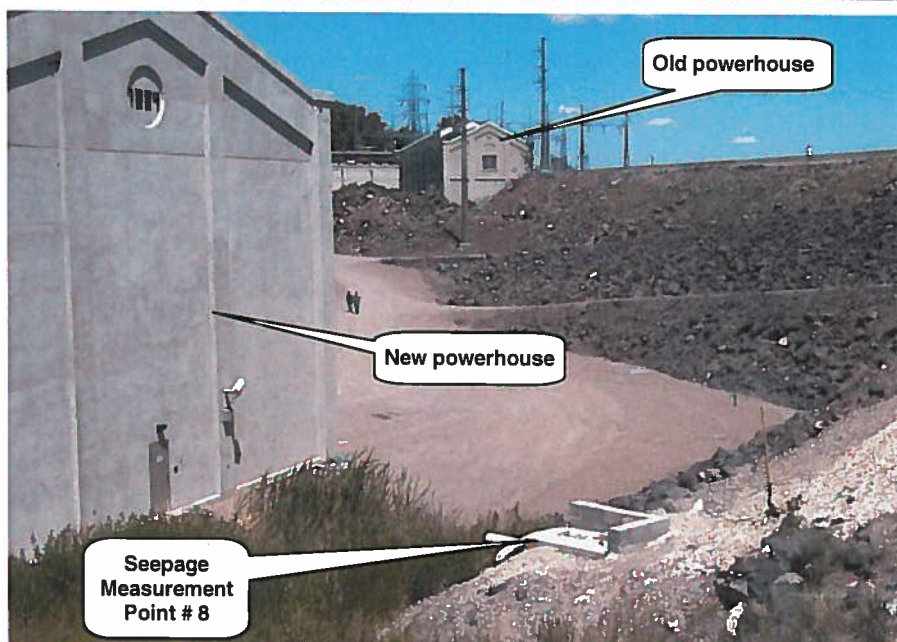
To More Overflow
Spillway Section,
South (BID)
Diversion, and the
South Dike Section.



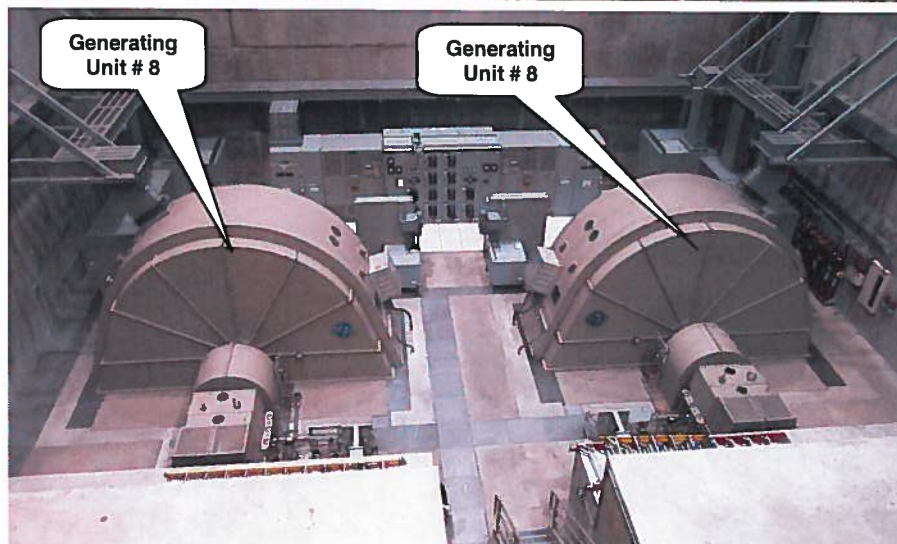
ABOVE: Picture of an aerial view of the northern (right) section of Minidoka Dam with the locations of various points of interest and reference indicated. This particular picture of an undated photo of the Minidoka project hanging in the Administration Building at Minidoka Dam was taken during the 2005 inspection.



ABOVE: View of the area below the intake to the new powerhouse left (south) of the embankment section of the dam. The locations of seepage measurement point # 7 (which has never flowed water) and seepage measurement point # 8 are indicated. The head on the flow through the seepage measurement point # 8 flume was measured at 0.38 feet.



LEFT: View of the area below the intake to the new powerhouse looking across seepage measurement point # 8 towards the old powerhouse.

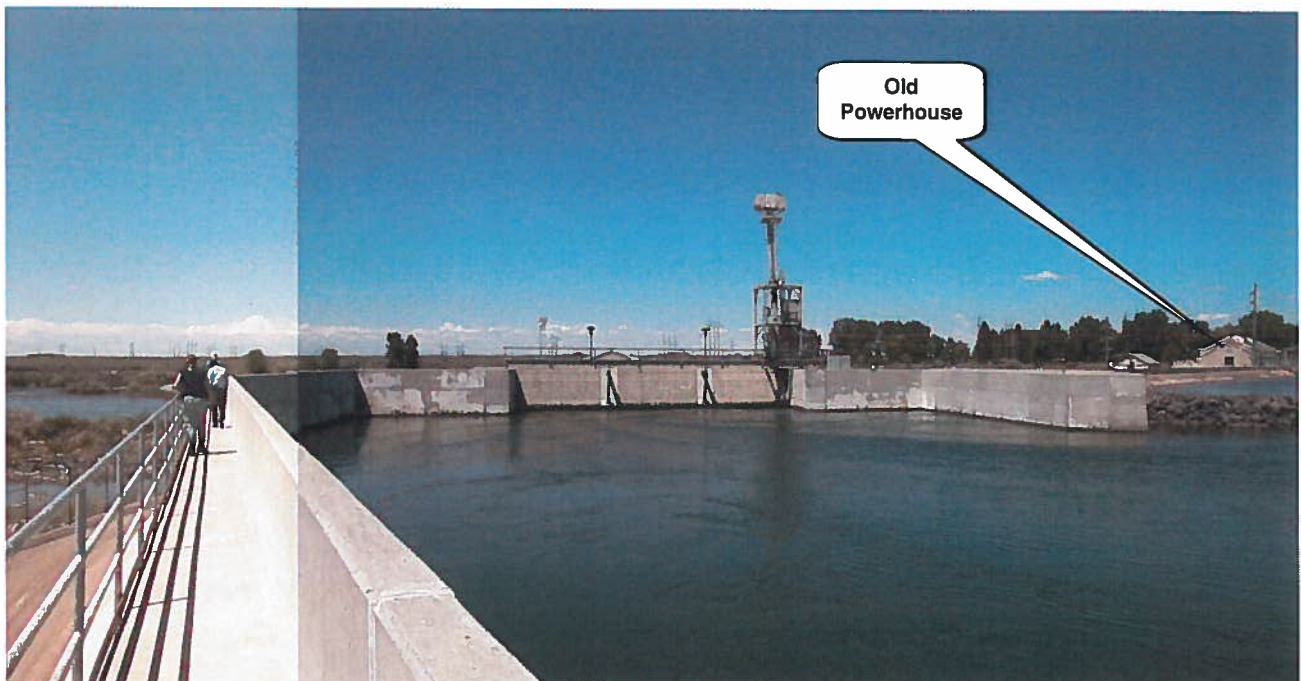


LEFT: View in the new powerhouse, looking downstream, showing generating units #8 and #9.



ABOVE: View of the upstream slope of the embankment section of the dam to the left (south) of the old powerhouse. Concrete paving on the upstream slope serves as slope protection and a concrete parapet wall on this section of the dam provides additional freeboard.

BELOW: View of the upstream face of the intake structure to the new powerhouse located to the left (south) of the embankment section of the dam shown above.





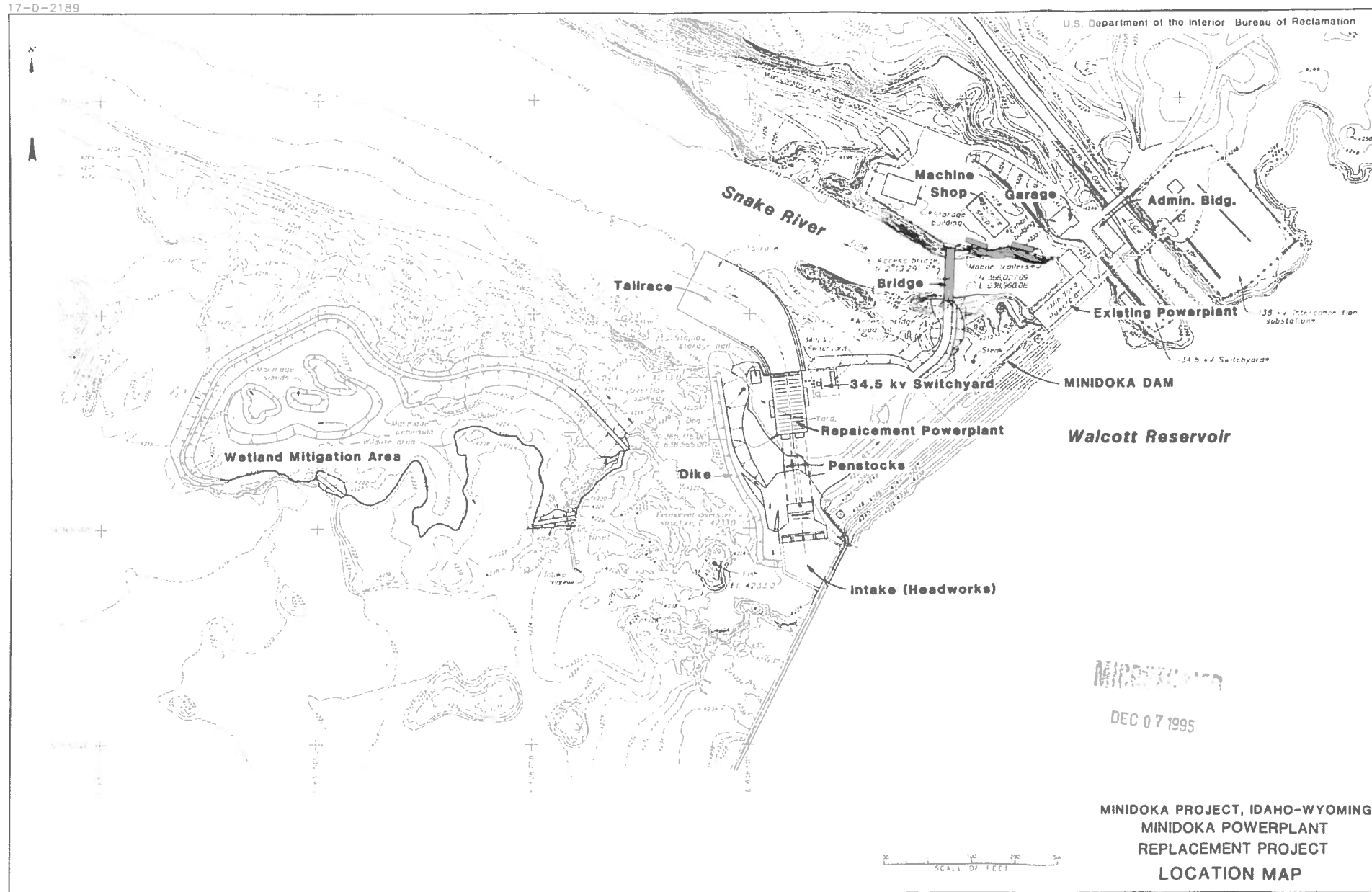
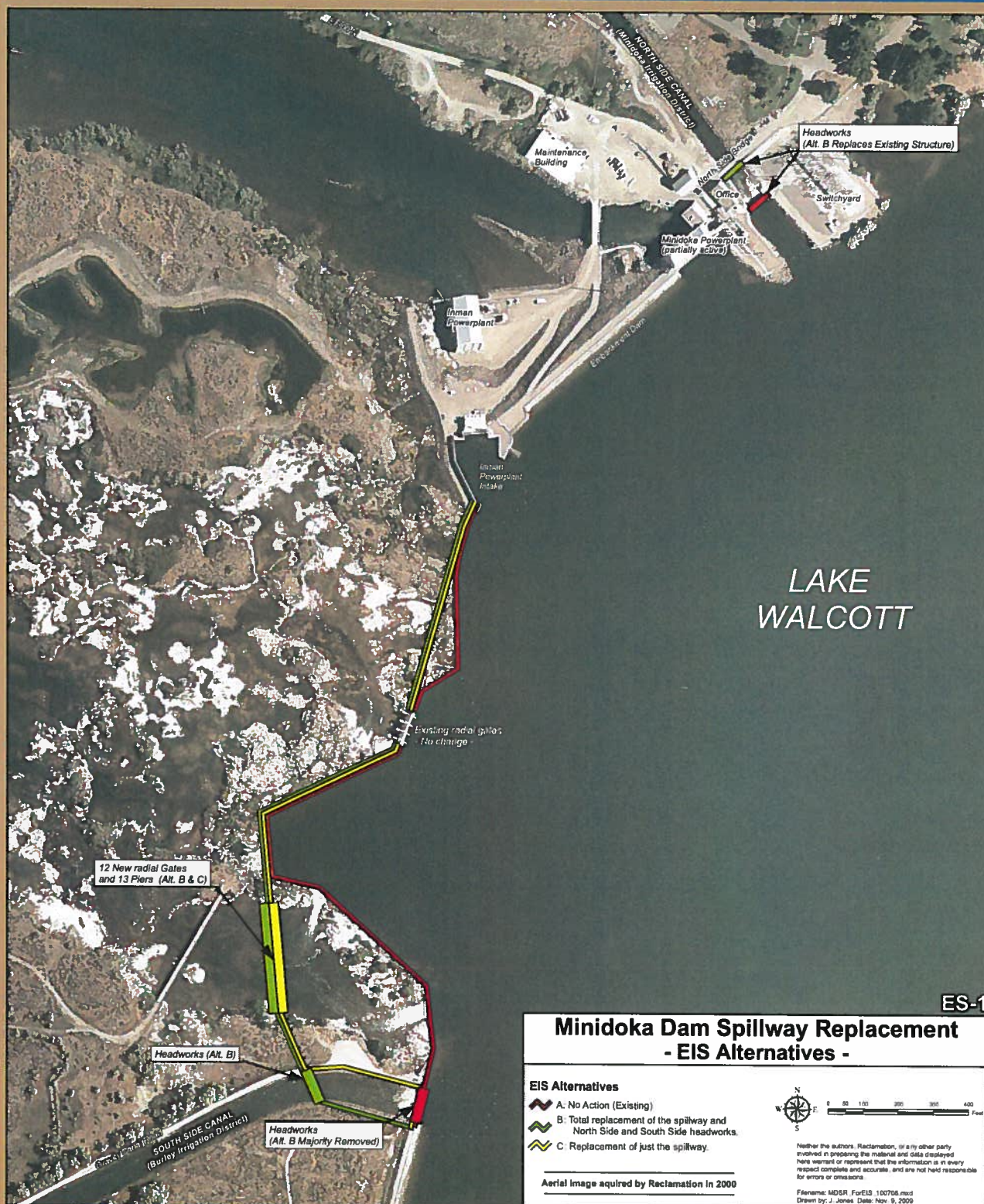


Figure 2



Edl, Michele

From: McGarry, Elizabeth [emcgarry@usbr.gov]
Sent: Thursday, August 22, 2013 3:24 PM
To: Edl, Michele
Subject: Re: Minidoka Power Generation 1-7056

Michele,

For unit 8 and 9, the high is 3166 cfs. 2011 was actually lower on those.

The high for unit 6 is 867 cfs Nov 4-9, 2011.

The high for unit 7 is 1700 the whole month of October 2012.

I'll send you the sources for those numbers.

Gail

E. Gail McGarry
Program Manager Water Rights and Acquisition
PN-3100, Bureau of Reclamation Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, ID 83706
208-378-5306

On Wed, Aug 21, 2013 at 4:06 PM, McGarry, Elizabeth <emcgarry@usbr.gov> wrote:
We are getting you the source information. We will coordinate with the information requested of our area office.

Thanks,
Gail

E. Gail McGarry
Program Manager Water Rights and Acquisition
PN-3100, Bureau of Reclamation Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, ID 83706
208-378-5306

On Mon, Aug 19, 2013 at 5:17 PM, Edl, Michele <Michele.Edl@idwr.idaho.gov> wrote:

Ms McGarry,

I need to be able to identify these documents correctly for the water right file. Would you please provide me the source references? Are these reports from the generation dispatchers at Black Canyon, from the local operators at Minidoka, from a regional compliance office... other?

Thank you.

Michele

From: McGarry, Elizabeth [mailto:emcgarry@usbr.gov]
Sent: Tuesday, August 13, 2013 6:17 PM
To: Edl, Michele
Subject: Minidoka Power Generation 1-7056

Attached are Minidoka Power Generation records.

E. Gail McGarry

Program Manager Water Rights and Acquisition

PN-3100, Bureau of Reclamation Pacific Northwest Region

1150 North Curtis Road, Suite 100

Boise, ID 83706

208-378-5306

Edl, Michele

From: McGarry, Elizabeth [emcgarry@usbr.gov]
Sent: Tuesday, August 13, 2013 6:17 PM
To: Edl, Michele
Subject: Minidoka Power Generation 1-7056
Attachments: 2013-08-013 U8&9 water flow for generation.pdf

Attached are Minidoka Power Generation records.

E. Gail McGarry
Program Manager Water Rights and Acquisition
PN-3100, Bureau of Reclamation Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, ID 83706
208-378-5306

Minidoka Water and Generation Summary Month - May 1999

Day	Unit 6	Unit 7	Unit 8	Unit 9	Radial Gates	Spill Way	Total Flow	Res. Elev.	River Elev.	Head
1	472	1549	3166	3166	0	1300	9653	4244.75	4195.96	48.79
2	492	1570	3166	3166	628	1300	10322	4244.73	4196	48.73
3	492	1570	3166	3166	929	1377	10700	4244.7	4196.08	48.64
4	174	605	2445	2950	232	1319	7725	4244.96	4194.23	50.73
5	663	1333	2077	2220	1889	2237	10419	4245.02	4196.07	48.95
6	700	1570	3166	3166	1624	3613	13839	4245.02	4196.1	48.92
7	716	1570	3166	3166	2941	4431	15990	4244.87	4196.14	48.73
8	755	1570	3166	3166	3607	4431	16695	4244.65	4196.12	48.53
9	755	1570	3166	3166	4212	4129	16998	4244.63	4196.16	48.47
10	755	1570	3166	3166	4313	4028	16998	4244.55	4196.26	48.29
11	755	1570	3166	3166	4456	3885	16998	4244.45	4196.15	48.3
12	755	1570	3166	3166	4066	4767	17490	4244.36	4196.18	48.18
13	755	1570	3166	3166	3161	5576	17394	4244.41	4196.11	48.3
14	755	1570	3166	3166	2462	5781	16900	4244.47	4196.13	48.34
15	755	1570	3166	3166	2123	5994	16774	4244.61	4196.13	48.48
16	755	1570	3166	3166	2259	6365	17281	4244.72	4196.23	48.49
17	755	1570	3166	3166	2160	6912	17729	4244.79	4196.14	48.65
18	755	1570	3166	3166	1783	7289	17729	4244.83	4196.14	48.69
19	755	1570	3166	3166	2344	7293	18294	4244.84	4196.13	48.71
20	755	1570	3166	3166	2869	7749	19275	4244.81	4196.15	48.66
21	755	1570	3166	3166	2970	7918	19545	4244.76	4196.11	48.65
22	755	1570	3166	3166	2620	7831	19108	4244.75	4196.2	48.55
23	755	1570	3166	3166	2105	7920	18682	4244.81	4196.11	48.7
24	755	1570	3166	3166	1357	8261	18275	4244.88	4196.04	48.84
25	755	1570	3166	3166	1072	7512	17241	4244.95	4196.08	48.87
26	755	1570	3166	3166	1081	6219	15957	4244.97	4196.06	48.91
27	755	1570	3166	3040	1721	5584	15836	4245.09	4196.05	49.04
28	755	1570	3166	3166	2139	5325	16121	4245.07	4196.04	49.03
29	755	1570	3166	3166	2193	5359	16209	4245.03	4196.03	49
30	755	1570	3166	3166	2573	5225	16455	4245.01	4196	49.01
31	755	1570	3166	3166	2739	5206	16602	4244.96	4196.01	48.95
Total								Brt.Fwd		
CFS	21829	47447	96336	96858	70628	162136	495234	4244.7		
Avg.	43658	94894	192672	193716	141266	324272	990468	Avg.	Avg.	Avg.
								4244.789	4196.043	48.74613
CFS	704.1613	1530.548	3107.613	3124.452	2278.323	5230.194	15975.29			
A/F	1408.323	3061.097	6215.226	6248.903	4556.645	10460.39	31950.58			
DAYS	31									

Storage	Storage Change	Cum. Disch.	Res. Inflow	Cum. Inflow	North Canal	South Canal	True Inflow
92273	523	1404270	19999	1460329	534	565	21104
92038	-235	1434914	28409	1490735	824	538	21509
91690	-348	1446314	21052	1501787	724	599	22267
91711	2021	1461764	18471	1520258	582	694	19447
95419	707	1482602	21545	1541803	500	606	20709
95418	0	1510280	27676	1569479	536	665	20890
93069	-1750	1542260	30290	1599771	669	536	31452
91105	-2563	1575650	30827	1630598	766	582	31140
90873	-232	1600648	33764	1664362	739	704	33226
89938	-835	1643642	33061	1697423	932	619	34890
88779	-1159	1677638	32837	1730260	1006	798	34681
87727	-1052	1712818	33928	1764188	1229	674	36020
86917	590	1747406	35376	1799564	1228	852	37496
89011	694	1781200	34484	1834000	1346	822	38362
90642	1631	1814754	35179	1869179	1094	988	37750
91924	1282	1849316	35344	1904523	892	886	39409
92744	820	1884774	36278	1941301	1064	910	38360
93207	463	1920232	35921	1977222	1106	900	27927
93319	112	1955820	36700	2013922	1187	1000	30996
92977	-342	1995570	38208	2052130	842	853	28658
92388	-589	2034460	38501	2090631	531	807	40288
92273	-115	2072675	38101	2129732	1078	807	30984
92977	704	2118040	38048	2168800	1076	834	40078
93781	804	2146590	37354	2204154	2278	1799	41807
94837	816	2181072	35296	2239452	2296	1802	20498
94831	234	2212988	32148	2271600	2496	1944	30600
96254	1423	2244658	33096	2304695	2520	1918	31481
96013	-241	2276900	32001	2336696	2490	2022	28519
95534	-479	2309318	31839	2368535	2116	1844	30660
95206	238	2342228	32672	2401307	1990	1841	36298
94711	-585	2378432	32619	2433926	1679	1606	30765
Brt.Fwd	3021	Brt.Fwd	993430	Brt.Fwd			1069832
91690		1384954		1440437			

38508 31935

1242.194 1030.161

Minidoka Water and Generation Summary Month - May 1989

Hour	Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Hour	sat	sun	mon	tue	wed	thu	fri	sat	sun	mon	tue	wed	thu	fri	sat	sun	mon	tue	wed	thu	fri	sat	sun	mon	tue	wed	thu	fri	sat	sun	mon	tue
1	24	26	28	28	28	15	28	27	27	28	28	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
2	27	28	29	29	27	18	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
3	27	27	28	28	27	19	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
4	28	28	27	27	27	19	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
5	28	28	28	28	28	25	27	28	29	28	28	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
6	27	28	27	27	28	28	27	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
7	27	28	28	27	27	27	27	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
8	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
9	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
10	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
11	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
12	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
13	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
14	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
15	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
16	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
17	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
18	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
19	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
20	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
21	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
22	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
23	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
24	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
25	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
26	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
27	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
28	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
29	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
30	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
31	28	28	28	27	27	28	28	27	28	29	27	28	28	27	27	28	28	28	28	27	28	27	27	28	28	28	28	28	28	28	28	
Total	557	602	601	448	500	672	670	671	667	674	673	668	668	668	668	672	673	666	665	667	664	665	664	666	662	660	658	658	660	660	661	
Mon. Int	857	1318	1080	2428	2828	3000	4270	4841	5608	6282	6856	7823	8280	8957	9626	10288	10971	11637	12302	12989	13633	14288	14862	15528	16200	16848	17607	18279	18844	19812	20283	
Accum	52458	53118	53770	54227	54727	55388	56088	56740	57407	58081	58754	59422	60088	60756	61425	62097	62770	63436	64101	64768	65432	66097	66761	67427	68095	68748	69408	70075	70743	71411	72082	
Water	5650	7811	28278	38480																												
W	7888	11800	35438	38743																												
D	1832	3088	7158	7283																												
Total																																
Br. Prod	61788																															
Unit																																
Daily																																
Totals																																
Unit 6	58	62	61	21	58	58	59	61	61	61	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	
Unit 7	130	131	132	48	110	131	130	132	132	133	132	132	132	132	132	132	133	133	133	133	133	132	132	132	132	132	132	132	132	132	132	
Unit 8	233	234	232	188	188	242	241	240	238	240	242	238	238	238	238	238	241	241	235	234	235	235	235	235	235	235	235	235	235	235	235	
Unit 9	236	236	238	218	173	240	240	238	238	240	240	238	238	238	238	238	238	238	238	238	238	237	237	237	237	237	237	237	237	237	237	
Total	657	682	681	448	500	672	670	671	667	674	673	668	668	668	668	672	673	666	665	667	664	665	664	666	662	660	658	658	660	660	661	
DEL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Balance
Check

May 1999

CFS

Day	Unit 6	7	Unit 8	Unit 9	Radial gates	Spillway	Total	Res. Elev	Ri	Head	Storage	Storage Change	Cum. Disch	Res. Inflow	nflow
1		157	300			1000	9000			48.17	92000	-570	1,000,000	19,229	1,000,000
2	112	157	300	1600	300	1000	12322	4744.73	1116.23	48.13	92000	-535	914	29,401	1,000,000
3	1	157	300		100	1000	12447.0	4746.06	1116.23	48.64	91690	-348	1,446,314	21,052	1,501,987
4	174	605	2445	2850	232	1319	7725	4244.96	4194.23	50.73	94711	3021	1,461,764	18,471	1,520,258
5	603	157	2077	2220	1889	2237	10,419	4250.02	4196.07	48.15	95118	707	1,482,600	21,545	1,541,703
6	700	1570	2160	160	1624	3613	13,839	4245.02	4196.10	48.92	95418	0	1,510,280	27,678	1,569,481
7	716	1570	3166	3166	2941	4431	15990	4244.87	4196.14	48.73	93,668	-1750	1,542,260	30,230	1,599,711
8	755	1570	3166	3166	3607	4431	16,695	4244.65	4196.12	48.53	91,105	-2563	1,575,650	30,827	1,630,538
9	755	1570	3166	266	4212	4129	16,998	4244.63	4196.16	48.47	90,873	-232	1,609,646	33,764	1,664,302
10	755	1570	3166	3166	4313	4028	16,998	4244.55	4196.26	48.29	89,938	-935	1,643,642	33,061	1,697,363
11	755	1570	3166	3166	4456	3885	16,998	4244.45	4196.15	48.3	88,779	-1159	1,677,638	32,937	1,730,200
12	755	1570	3166	3166	4066	4767	17,490	4244.36	4196.18	48.18	87,727	-1052	1,712,618	33,928	1,764,128
13	755	1570	3166	3166	5576	17,017	17,017	4244.41	4196.11	48.3	88,317	590	1,747,406	35,378	1,799,506
14	755	1570	3166	3166	2462	5781	16,900	4244.47	4196.13	48.34	89,011	694	1,781,206	34,494	1,834,000
15	755	1570	3166	3166	2123	5994	16,774	4244.61	4196.13	48.48	90,612	1631	1,814,754	35,179	1,869,179
16	755	1570	3166	3166	2259	6305	17,281	4244.72	4196.23	48.49	91,924	1282	1,849,316	35,844	1,905,023
17	755	1570	3166	3166	2160	6912	17,779	4244.79	4196.14	48.65	92,744	820	1,884,174	36,278	1,941,301
18	755	1570	3166	3166	1783	7289	17,779	4244.83	4196.14	48.69	93,207	463	1,929,232	35,921	1,977,222
19	755	1570	3166	3166	2344	7293	18,294	4244.84	4196.13	48.71	93,319	112	1,956,820	36,700	2,013,922
20	755	1570	3166	3166	2869	7749	19,275	4244.81	4196.15	48.66	92,977	-342	1,995,370	38,208	2,052,130
21	755	1570	3166	3166	2970	7918	19,545	4244.76	4196.11	48.65	92,388	-589	2,034,460	38,501	2,090,631
22	755	1570	3166	3166	2620	7831	19,108	4244.75	4196.10	48.55	92,223	-115	2,072,676	38,101	2,126,732
23	755	1570	3166	3166	2105	7920	18,682	4244.81	4196.11	48.70	92,977	704	2,110,040	38,068	2,161,111
24	755	1570	3166	3166	1357	8261	18,275	4244.83	4196.04	48.84	93,781	804	2,146,590	37,354	2,204,154
25	755	1570	3166	3166	1072	7512	17,241	4244.95	4196.08	48.87	94,597	816	2,181,072	35,298	2,239,452
26	755	1570	3166	3166	1081	6219	15,957	4244.97	4196.06	48.91	94,831	234	2,212,986	32,148	2,271,600
27	755	1570	3166	3040	1721	5584	15,836	4245.09	4196.05	49.04	96,254	1423	2,244,658	33,095	2,304,645
28	755	1570	3166	3166	2139	5325	16,121	4245.07	4196.04	49.03	96,013	-241	2,276,900	32,001	2,336,696
29	755	1570	3166	3166	2143	5359	16,209	4245.03	4196.03	49.00	95,534	-479	2,309,318	31,939	2,368,635
30/1	755	1570	3166	3166	2573	5225	16,455	4245.01	4196.01	49.01	95,296	-238	2,342,228	32,672	2,401,307
	21829	47447	96336	96858	70628	162130	445234	N/A	N/A	N/A	N/A	3021	N/A		N/A

DATE May 1999	Unit 6 Generation		Unit Starts	Unit 7 generation		Unit starts	Unit 8 Generation		Unit Starts	Unit 9 Generation		Unit starts
	Day	Month		Day	Month		Day	Month		Day	Month	
1	58	58	1	130	130	0	233	233	0	236	236	0
2	62	120	0	131	261	0	234	467	0	235	471	0
3	61	121	0	132	393	0	232	679	0	236	707	0
4	21	202	0	49	442	0	157	958	0	219	926	0
5	58	260	0	110	552	0	159	1017	1	173	1099	1
6	59	319	0	131	633	0	242	1259	0	240	1339	0
7	59	378	0	130	813	0	241	1500	0	240	1579	0
8	61	439	0	132	945	0	240	1740	0	238	1817	0
9	61	500	0	132	1077	0	238	1978	0	236	2053	0
10	61	561	0	133	1210	0	240	2218	0	240	2293	0
11	59	620	0	132	1342	0	242	2460	0	240	2533	0
12	59	679	0	132	1474	0	239	2699	0	238	2771	0
13	59	738	0	132	1606	0	239	2938	0	236	3007	0
14	59	797	0	132	1738	0	239	3177	0	238	3245	0
15	60	857	0	132	1870	0	239	3416	0	238	3483	0
16	59	916	0	133	2003	0	241	3657	0	239	3722	0
17	60	976	0	133	2136	0	241	3898	0	239	3961	0
18	60	1036	0	133	2269	0	235	4133	0	238	4199	0
19	60	1096	0	133	2402	0	234	4367	0	238	4437	0
20	61	1157	0	133	2535	0	235	4602	0	238	4675	0
21	60	1217	0	132	2667	0	234	4836	0	238	4913	0
22	60	1277	0	132	2800	0	235	5071	0	237	5150	0
23	60	1337	0	132	2932	0	235	5306	0	237	5387	0
24	61	1398	0	132	3064	0	235	5541	0	238	5625	0
25	62	1460	0	131	3195	0	229	5770	1	230	5855	1
26	62	1522	0	132	3327	0	236	6006	0	239	6094	0
27	63	1585	0	133	3460	0	234	6240	0	228	6322	0
28	62	1647	0	132	3592	0	234	6474	0	241	6563	0
29	62	1709	0	132	3724	0	234	6708	0	240	6803	0
30	61	1770	0	133	3857	0	233	6941	0	241	7044	0
31	62	1832	0	132	3989	0	218	7159	0	239	7283	0
Total	N/A	1832	2	N/A	3989	1	N/A	7159	2	N/A	7283	2

Edl, Michele

From: McGarry, Elizabeth [emcgarry@usbr.gov]
Sent: Wednesday, August 07, 2013 3:27 PM
To: Edl, Michele
Subject: Re: 1-7056 permit (Minidoka's Inman powerhouse)
Attachments: U8 gen nameplate.pdf; u8 turbine nameplate (1).pdf

Michelle - Here is picture of name plate info. It is identical for Unit 8 and unit 9 (but let me know if you need actual picture of second one).

Other info coming.

Gail

E. Gail McGarry
Program Manager Water Rights and Acquisition
PN-3100, Bureau of Reclamation Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, ID 83706
208-378-5306

On Wed, Jul 24, 2013 at 7:00 PM, McGarry, Elizabeth <emcgarry@usbr.gov> wrote:
We are getting the info together.

E. Gail McGarry
Program Manager Water Rights and Acquisition
PN-3100, Bureau of Reclamation Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, ID 83706
208-378-5306

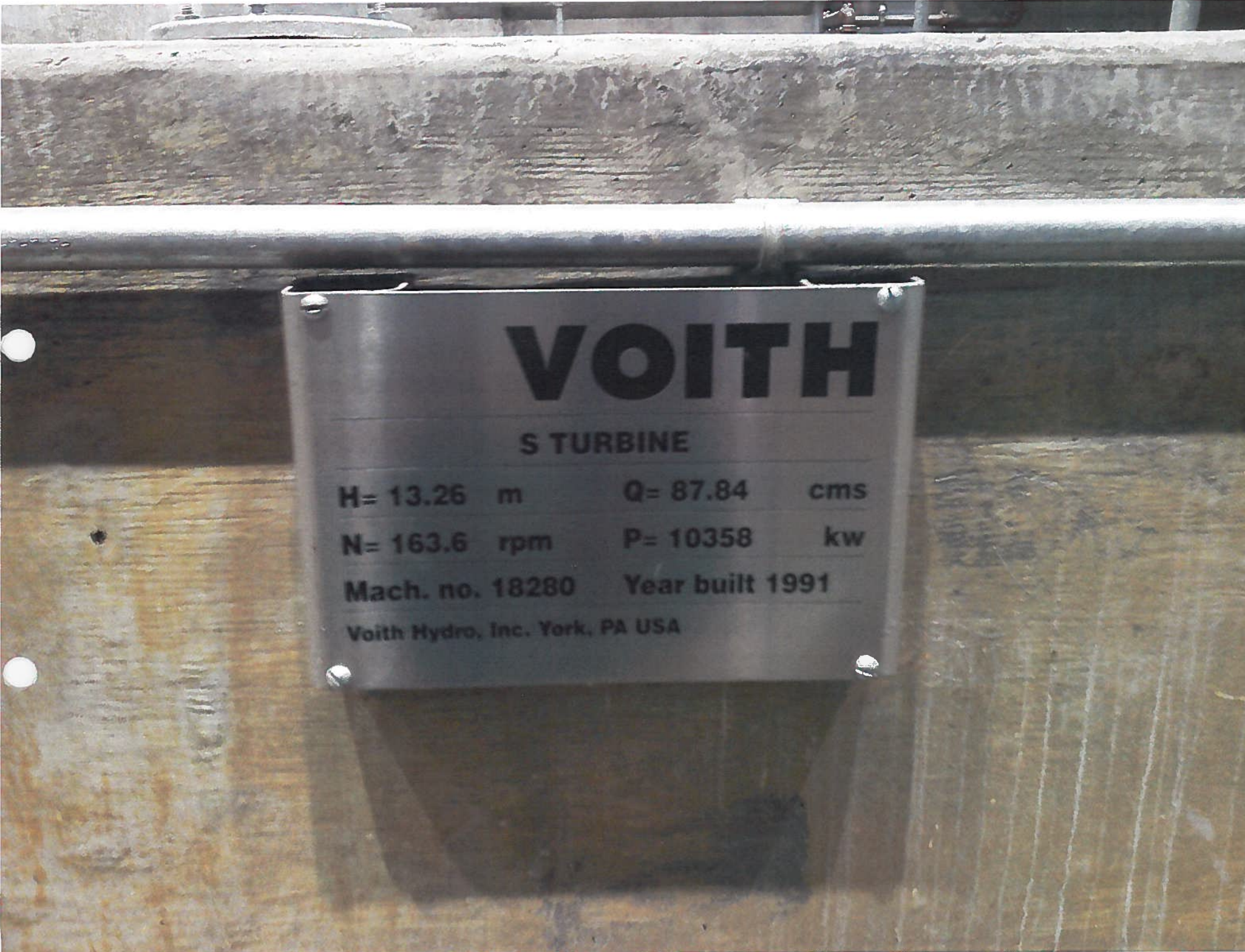
On Wed, Jul 24, 2013 at 9:39 AM, Edl, Michele <Michele.Edl@idwr.idaho.gov> wrote:

Ms. McGarry,

This is just a quick note to ask for a status update. It's been a couple weeks since we met. You may remember that I needed some additional information: 1)the nameplate information from the turbine and generator pairs, 2)the maximum hydraulic capacity of the turbines and 3)evidence confirming beneficial use within the development period. Information satisfying the latter might be in form of turbine index test/commissioning test results showing flow and generation.

I would be happy to meet with you and or your staff to discuss any question or issues you might have. Thank you.

Michele Edl



VOITH

S TURBINE

H= 13.26 m Q= 87.84 cms

N= 163.6 rpm P= 10358 kw

Mach. no. 18280 Year built 1991

Voith Hydro, Inc. York, PA USA

水轮发电机 HYDROGENERATOR

TYPE OF GENERATOR SFWD-44/4500

PHASE 3

RATED OUTPUT OF GENERATOR 11111 KVA

FREQUENCY 60Hz

RATED VOLTAGE 4150 V

POWER FACTOR 0.9

RATED CURRENT 1542 A

RATED SPEED 163.6 RPM

EXCITATION VOLTAGE 250 V

INSULATION CLASS F

EXCITATION CURRENT 440 A

UNIT WEIGHT 132 MT

EXCITATION METHOD STATIC EXCITATION

D.F. No. 11111

DIRECTION OF ROTATION CW FROM UPSTREAM

DATE OF RELEASE 1988

中华人民共和国
东方电机厂

DONGFANG ELECTRIC MACHINERY WORKS
THE PEOPLE'S REPUBLIC OF CHINA

Edl, Michele

From: Edl, Michele
Sent: Wednesday, July 03, 2013 2:47 PM
To: 'McGarry, Elizabeth'
Subject: Permit 1-7056

Ms. McGarry,

As I explained in my brief message, I have been assigned to review water right permit file 1-7056, and if possible to issue a license for the beneficial use developed for that permit. Thank you for agreeing to assist me.

On December 17, 1980, the Idaho Department of Water Resources issued Permit 1-7056 which authorized the United States of America, acting through the Bureau of Reclamation, to establish a right to divert 5875 cfs from the Snake River in **SE¼NW¼, Section 1, Township 9 South, Range 25 East**. The permit is for power purposes at Minidoka Dam.

Similar to the water right for the valve house hydropower facility at Deadwood Dam, permit 1-7056 is for hydropower and the water right file has some information gaps. We resolved the Deadwood Dam permit with an information exchange and a meeting where you, your staff and I discussed the project. I hope that a similar information exchange and meeting can resolve any issues impeding the continued processing of this permit.

After a quick check of the file contents, I found that a field exam has not yet been accomplished. Again, similar to the Deadwood Dam hydropower facility, there is a significant quantity of information related to the Minidoka Dam's civil engineering works already available to me in records maintained by IDWR's Dam Safety section. And I am familiar with the USGS and USBR streamflow databases. I expect to take advantage of those archives to complete the required beneficial use report rather than to schedule another onsite visit.

However, IDWR's files are lacking some key data. I don't have information about the use of water from the Snake River for power generation. Specifically, I don't have generation records which can be compared to available flow records and thereby confirm that power use was occurring and that it had been developed during the period that the permit was in effect.

I also lack information related to the capacity of the turbine-generator sets. Permit 1-7056 authorizes an additional 5875 cfs for use in a new powerhouse which I understand was constructed in the 1990's. Existing SRBA decreed water rights 1-217, 1-218, 1-4024 and 1-4025, authorize 5035 cfs for power use at the Minidoka Dam hydroelectric facilities. Unofficial information available to me indicates that the total water utilization for power purposes is less than the 10,910 cfs authorized through those four, decreed water rights and permit 1-7056.

To get us started, I have attached a file to this email which is a screen-shot from my computer. The image shows the place-of-use according to IDWR's database and records. I believe that both the place-of-use and the point-of-diversion were actually developed in **lot 3 (NE¼SW¼) Section 1, Township 9 South, Range 25 East**. The locations of these elements are different than was authorized by permit 1-7056. So, before a license can be issued, the permit must be amended to depict the water use as it was actually developed.

I can provide that amendment document when we meet at 10 on the 10th of July.

To facilitate the licensing process, please provide:

- 1) One year's worth of daily average generation data. Please select a year near to the date that Proof of Beneficial Use was submitted (which was 10/24/2000).
- 2) The total hydraulic capacity of the turbines installed at the Minidoka Dam and copies of the index tests or other support documents which confirm that capacity.

Don't hesitate to contact me with questions.

Respectfully,

Michele Edl
Associate Engineer
Water Rights Section
Idaho Department of Water Resources
322 East Front Street
Boise, ID 83720-0098
Phone: 208-287-4946

Fax: 208-289-4800



permit 1-7056
(USBRs Minidoka ...



Layers

- ☐ SpatialData
- ☒ Water Permit POD
- ☒ Permit POU
- ☐ Taxlots
- ☒ PLSS
- ☒ Township/Range
- ☒ Sections
- ☒ QQ
- ☐ DRG
- ☒ Imagery
 - ☐ 1987
 - ☐ 1992-2000 (1 meter)
 - ☐ esri Imagery (1 foot)
 - ☒ 2011 (1 meter)
 - ☐ 2009 (1 meter)
 - ☐ 2006 (2 meter)
 - ☐ 2006 (1 meter)
 - ☐ 2004 (1 meter)

