What kind of storm can we 'really' expect, and what kind of storm can we really handle?

To answer this in depth would require a lot of engineering time, but using some available facts, logic and a rule-of-thumb or two we can get close enough to feel comfortable.

At 2280 feet the Lake is around 500 acres. At 2290 feet it grows to around 750 acres. Using 720 acres as a 'round number' we get a convenient ratio to remember;

1 inch of rain equals one foot of lake elevation with no (zero) outflow

This says that a rainfall of 10 inches will fill the lake up to 2290/2291 feet. A 12 inch rainfall would fill it up to the very brink; again, without any outflow.

At 2280 there is zero outflow. At 2290/91 there is 19,000 cubic feet per second (CFS) outflow. 19,000 CFS equates to a steady, even rainfall across the watershed of 2.18 inches per hour.

We can withstand steady rainfall across the entire watershed of 2.18 inches per hour FOREVER; even more than 40 days and 40 nights... and never get higher than 2291 feet...

Only a total rainfall of greater than 12 inches AND sustained rainfall beyond that of greater than 2 inches per hour can possibly fill/overtop the Lake, today.

We can take comfort in the fact that this would take a storm more than twice as severe as has occurred in the Johnstown area, ever, to overtop the dam today.

The National Weather Service, NOAA (the same folks who predict the PMF), TODAY on their web site, still predict the **once-every-1000-year storm** for Indian Lake as 6.5 inches in 6 hours, 9.7 in 24 hours and 12 inches over 10 days. This wouldn't fill the lake more than half-way...

The actual NWS download is attached.

Precipitation Frequency Data Server

POINT PRECIPITATION FREQUENCY ESTIMATES FROM NOAA ATLAS 14

Pennsylvania 40.04 N 78.87 W 2381 feet

from "Precipitation-Frequency Atlas of the United States" NOAA Atlas 14, Volume 2, Version 3
G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley
NOAA, National Weather Service, Silver Spring, Maryland, 2004
Extracted: Tue Apr 19 2011

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Precipitation Frequency Estimates (inches)

ARI* (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.31	0.48	0.59	0.78	0.96	1.13	1.22	1.51	1.85	2.14	2.49	2.87	3.41	3.94	5.54	6.98	8.96	10.83
2	0.37	0.58	0.71	0.95	1.16	1.37	1.47	1.81	2.22	2.56	2.98	3.42	4.06	4.68	6.50	8.16	10.45	12.61
5	0.45	0.70	0.86	1.18	1.48	1.73	1.85	2.27	2.75	3.19	3.71	4.21	4.94	5.59	7.54	9.34	11.83	14.16
10	0.51	0.79	0.98	1.36	1.73	2.04	2.17	2.65	3.21	3.74	4.35	4.88	5.66	6.32	8.36	10.27	12.90	15.33
25	0.60	0.92	1.13	1.60	2.08	2.49	2.65	3.21	3.90	4.58	5.31	5.86	6.68	7.33	9.45	11.48	14.25	16.80
50	0.67	1.01	1.26	1.80	2.37	2.87	3.05	3.69	4.50	5.30	6.15	6.69	7.51	8.13	10.28	12.39	15.26	17.88
100	0.74	1.12	1.39	2.00	2.68	3.28	3.50	4.22	5.17	6.12	7.10	7.58	8.39	8.95	11.10	13.28	16.21	18.88
200	0.82	1.23	1.53	2.23	3.02	3.74	3.99	4.81	5.92	7.04	8.17	8.56	9.32	9.79	11.92	14.15	17.12	19.81
500	0.94	1.38	1.72	2.55	3.52	4.43	4.75	5.70	7.07	8.45	9.80	9.99	10.64	10.98	12.99	15.25	18.25	20.96
1000	1.03	1.50	1.87	2.80	3.94	5.02	5.40	6.47	8.07	9.69	11.24	11.35	11.79	12.04	13.78	16.07	19.07	21.77

* These precipitation frequency estimates are based on a partial duration series. **ARI** is the Average Recurrence Interval.
Please refer to NOAA Atlas 14 Document for more information. NOTE: Formatting forces estimates near zero to appear as zero.