

DOCKET NO. D-77-20 CP (Revision 9)

A RESOLUTION supplementing and amending Docket No. D-77-20 CP (Revisions 7 and 8) to establish a temporary spill mitigation program for Neversink, Pepacton and Cannonsville Reservoirs.

WHEREAS, on April 21, 2004, the Delaware River Basin Commission (DRBC) with the unanimous consent of the Parties to the 1954 Supreme Court Decree (Decree Parties) adopted Resolution No. 2004-3, Docket No. D-77-20 CP (Revision 7), establishing an interim program for managing releases from the New York City Neversink, Pepacton and Cannonsville Reservoirs (NYC Delaware Basin Reservoirs);

WHEREAS, on July 13, 2004, the DRBC adopted Resolution No. 2004-9, Docket No. D-77-20 CP (Revision 8), amending Docket No. D-77-20 CP (Revision 7) to allow a portion of the Excess Release Quantity established by the 1954 Supreme Court Decree to be used for purposes of aquatic resource research related to fisheries enhancement, including dwarf wedgemussel studies;

WHEREAS, through Resolution No. 2004-3 the Decree Parties committed to continuing discussions to develop and implement by May 31, 2007 a long-term flexible program to manage releases from the NYC Delaware Basin Reservoirs to better address fisheries and other needs in the tailwaters below these reservoirs;

WHEREAS, in Resolution No. 2004-3 the Decree Parties agreed that the long-term program must take into account related issues including but not limited to those issues specified in this Resolution;

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\* Resolution No. 2006-18 was amended by Resolution No. 2007-1, retroactive to January 9, 2007. Amendments included the following: (1) the maximum combined spill and release flow rate for Neversink Reservoir was increased from 1800 cfs to 3400 cfs; and the maximum combined spill and release flow rate for Cannonsville Reservoir was increased from 2200 cfs to 4200 cfs; (2) the official flood stage for the East Branch at Fishs Eddy was lowered from 15 feet to 13 feet; and (3) the official flood stage for the Neversink River at Bridgeville was elevated from 8 feet to 13 feet. Please see [Resolution No. 2007-1](#) for additional details.

\*\* By Resolution No. 2007-7 approved on May 10, 2007, the Commission extended through September 30, 2007 the releases program established by Resolution No. 2006-18 (as amended). Also by Resolution No. 2007-7, the Commission authorized and requested the parties to the Supreme Court decree of 1954 to establish release rates for the City Delaware Reservoirs for the period from July 1 through September 14, 2007 consistent with the spill mitigation rule curves that appear in Figures 1 and 2 of Resolution No. 2006-18. See [Resolution No. 2007-7](#) for additional details.

WHEREAS, reduction of spill volumes from the NYC Delaware Basin Reservoirs during flood events is a related issue under consideration in the development of the long-term flexible program;

WHEREAS, the Commission and Decree Parties believe that implementation of a temporary spill mitigation program through May 31, 2007 may reduce excess spillage through supplemental releases from the NYC Delaware Basin Reservoirs and should not be delayed until final approval of a long-term flexible program occurs;

WHEREAS, the NYC Delaware Basin Reservoirs already provide substantial attenuation of peak flows downstream even when one or more of the reservoirs is spilling; and

WHEREAS, an interim spill mitigation program has the potential to reduce spill rates and offer a small measure of peak flow reduction during a flood event, although any such reduction will diminish with increasing distance downstream of the Cannonsville, Pepacton, and Neversink dams;

WHEREAS, the NYC Delaware Basin Reservoirs were not designed as flood control reservoirs and do not contain release works capable of releasing water at rates necessary for effective flood management operation;

WHEREAS, notwithstanding this temporary spill mitigation program the DRBC and the Decree Parties strongly encourage communities and individuals downstream of the NYC Delaware Basin Reservoirs to take all necessary and prudent actions to improve flood preparedness and increase awareness of flood potential;

WHEREAS, in light of the only limited flood mitigation benefits achievable through this spill mitigation program and the benefits to the Basin community from better flood management information and flood control, through a concurrent resolution Pennsylvania, New Jersey, New York and Delaware have agreed to share the cost of developing a model to study more broadly and thoroughly the potential effects of managing reservoirs throughout the Basin to reduce flooding in the Delaware River and its tributaries;

WHEREAS, the Commission intends to form a task force to examine stormwater management, land-use patterns, open space and farmland preservation, floodplain regulations and other potential non-structural flood mitigation measures in the Basin; and

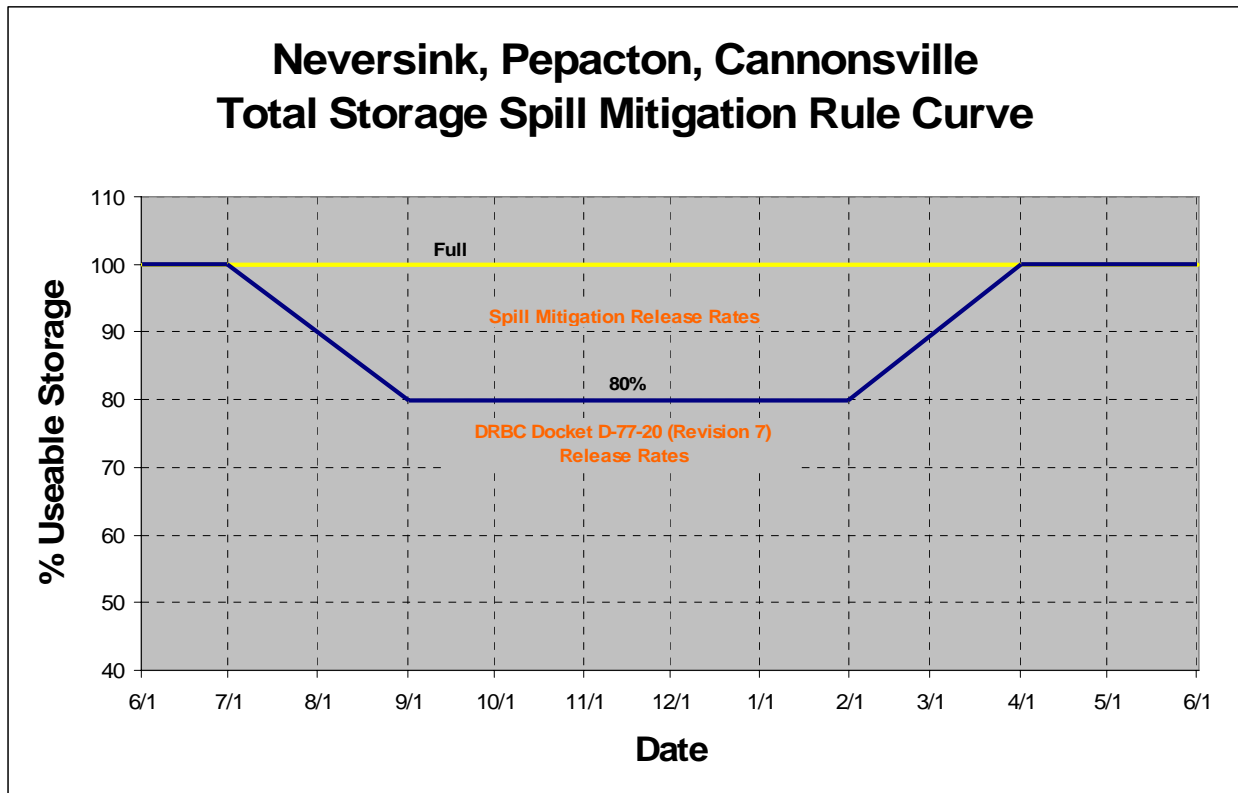
WHEREAS, New York City with the consent of the other Decree Parties commenced implementation of a temporary spill mitigation program on September 22, 2006, subject to further action by the DRBC; now therefore

BE IT RESOLVED by the undersigned Commissioners and Decree Parties:

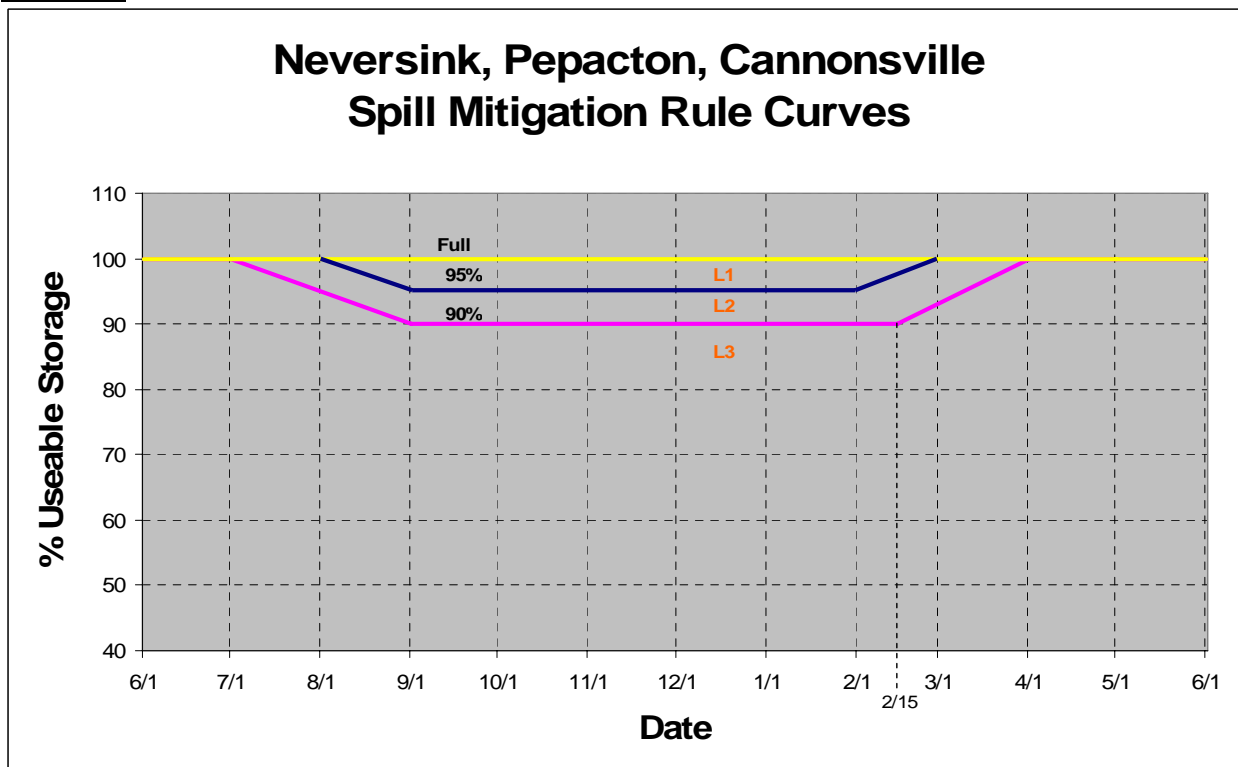
1. For the period ending May 31, 2007, whenever the usable storage in the NYC Delaware Basin Reservoirs is above the 80% rule curve as shown in Figure 1, in lieu of the releases otherwise required under Docket D-77-20 (Revision 7), supplemental releases from the NYC Delaware Basin Reservoirs will be made in accordance with the individual rule curves shown on Figure 2 and at rates as shown in Table 1. In order to provide for such releases, it is agreed that the operational assumptions used for modeling analyses and stipulated in paragraph 2 will apply throughout the period this program remains in effect.

2. The releases under this program have been modeled using the OASIS model and are based upon an operational assumption of a running daily average diversion by the City of not more than 610 mgd, combined, from the NYC Delaware Basin Reservoirs. The habitat flow targets, in accordance with Revision 7, continue to apply when storage is above the 80% rule curve.

**Figure 1**



**Figure 2**



**Table 1**

Release Level	Release Rates (cfs)					
	Spring/Fall			Winter		
	Cannonsville	Pepacton	Neversink	Cannonsville	Pepacton	Neversink
L1	1000	700	190	1000	700	190
L2	275	200	85	250	185	85
L3	140	100	75	110	85	65

<p><b>Spring/Fall:</b> May 1 – May 31 and Sept 15 – Sept 30  <b>Winter:</b> October 1 – April 30</p>
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3. Controlled reservoir releases will be made in accordance with the following:
  - i. The flood stage for the West Branch Delaware River at Hale Eddy is 11 feet. Accordingly, supplemental releases from Cannonsville Reservoir will not be made when the river stage for the West Branch Delaware River at Hale Eddy is above 9 feet, or is forecasted to be above 9 feet within 48 hours of a planned supplemental release from Cannonsville Reservoir. This guidance may be modified at any time if additional information demonstrates that a lower cautionary stage should be used to limit the supplemental releases.
  - ii. The flood stage for the East Branch Delaware River at Fishs Eddy is 15.0 ft. Accordingly, supplemental releases will not be made when the river stage for the East Branch Delaware River at Fishs Eddy is above 13.0 ft. or is forecast to be above 13.0 ft. within 48 hours of a planned supplemental release from Pepacton Reservoir. This guidance may be modified at any time if additional information demonstrates that a lower cautionary stage should be used to limit the supplemental releases.
  - iii. The flood stage for the Neversink River at Bridgeville is 8 feet. Accordingly, supplemental releases will not be made when the river stage for the Neversink River at Bridgeville is above 6 feet, or is forecast to be above 6 feet within 48 hours of a planned supplemental release from Neversink Reservoir. This guidance may be modified at any time if additional information demonstrates that a lower cautionary stage should be used to limit the supplemental releases.
  - iv. Supplemental releases may be suspended from the respective reservoir if ice conditions threaten flood prone areas of the Neversink River below Neversink Reservoir, East Branch Delaware River below Pepacton Reservoir, or West Branch Delaware River below Cannonsville Reservoir.

- v. Supplemental releases will be designed so that the combined discharge from the reservoirs and their respective spillways do not exceed flow rates as detailed in Table 2 below. All controlled releases will be reduced to the conservation releases in Table 3 when the spillway discharge exceeds these flow rates.
- vi. To more naturally effect downward transitions between release levels identified in Figures 1 and 2 and Table 1, supplemental release rates shall be ramped generally over a three-day period at Cannonsville and Pepacton Reservoirs and a two-day period at Neversink Reservoir, but in increments no less than 10 cfs at any reservoir.

**Table 2**

<b>Reservoir</b>	<b>Maximum Combined Spill/Release Flow Rate</b>
Neversink	1800 cfs
Pepacton	2400 cfs
Cannonsville	2200 cfs

**Table 3**

**Conservation Releases**

<i>Reservoir</i>	<i>----- Conservation Release (cfs) -----</i>			
	<i>Drought Normal</i>	<i>Drought Watch</i>	<i>Warning</i>	<i>Drought</i>
Cannonsville (9/1-5/31)	45	38	32	23
Cannonsville (6/1-8/31)	60	51	43	23
Pepacton	35	30	25	19
Neversink	25	21	18	15

- 4. For the period ending May 31, 2007, whenever the total storage in the NYC Delaware Basin Reservoirs is below the applicable point on the 80% rule curve as shown in Figure 1, releases from the NYC Delaware Basin Reservoirs will be made and accounted for in accordance with DRBC Docket D-77-20 (Revision 7).
- 5. For the period ending May 31, 2007, whenever the total storage in the NYC Delaware Basin Reservoirs is above the applicable point on the 80% rule curve as shown in Figure 1 and supplemental releases are made in accordance with this spill mitigation program, to the extent necessary, habitat releases may be made to meet the habitat flow targets in accordance with DRBC Docket D-77-20 (Revision 7). There shall be no credits or debits to the ‘Habitat Protection Bank’ as established in Revision 7 including without limitation to the Excess Release Quantity Bank portion of the Habitat Protection Bank provided from the Excess Release Quantity.

6. The “Rainfall Event Based Temporary Spill Reduction Program for Pepacton Reservoir” effective February 8, 2006 and “Rainfall Event Based Temporary Spill Reduction Program for Neversink Reservoir” effective February 8, 2006 are hereby suspended for the effective period of this agreement.
7. The “Interim Program for Neversink Reservoir Spill Reduction” effective November 1, 2005 and the “Interim Program for Pepacton Reservoir Spill Reduction” effective November 1, 2005 are hereby suspended for the effective period of this agreement.
8. A quantity of water no greater than 50% of the water equivalent of snow pack storage in the watershed above each reservoir will be included in the storage calculation to determine the reservoir release levels in Figure 2 and Table 1.
9. The actions of New York City commencing implementation of the spill mitigation program with the agreement of the other Decree Parties are ratified and approved.
10. The program established by this Resolution will expire on May 31, 2007 and may be terminated at any time by the Commission or at the request of any Decree Party or may be modified by the Commission with the unanimous consent of the Decree Parties.

/s/ Gwen E. Baker

Lt. Col. Gwen E. Baker, Chair *pro tem*

/s/ Pamela M. Bush

Pamela M. Bush, Esq., Commission Secretary

ADOPTED: September 27, 2006

Consent to Action by The Decree Parties

Consent of the Parties to the U.S. Supreme Court Decree in New Jersey v. New York, 347 U.S. 995 (1954), approving the Temporary Spill Mitigation Program for Neversink, Pepacton and Cannonsville Reservoirs, September 27, 2006 through May 31, 2007, implemented by the City of New York.

_____ State of New Jersey	_____ Date	_____ State of New York	_____ Date
_____ State of Delaware	_____ Date	_____ Commonwealth of Pennsylvania	_____ Date
_____ State of Delaware	_____ Date	_____ City of New York	_____ Date

*[Note: The Commissioners from the four states verbally consented to this action by unanimous vote during the Public Hearing held on September 27, 2006. Please see the Minutes from that meeting.]*