

March 14, 2025

Maria D. Bebenek, P.E.
Program Manage
Department of Environmental Protection – Clean Water Program
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Re: TMI-1 (PA0009920) Chemical Additives

Dear Ms. Bebenek:

Constellation Energy Generation, LLC (Constellation) Three Mile Island Nuclear Station, Unit 1 (TMI-1) is submitting herewith six New Chemical Request Forms and three Notification Forms.

Note that many of these chemicals were already approved for use at TMI-1 in 2010 or earlier, before PADEP instituted the new chemical approval system.

All these chemicals, along with the WQBEL-based maximum allowable usage rate and requested maximum usage rate, were listed in the Chemicals Additives table (starting on page 18 of 647) within the NPDES renewal application resubmittal to PADEP on 3/7/25; the safety data sheets were included (starting on page 325 of 647).

Please do not hesitate to reach out to me by email at Alyssa. Hockaday@constellation.com or telephone at (267) 533-5679, or Debra Musser at Debra. Musser@constellation.com or (267) 533-7308 with any questions.

Sincerely yours,

Alyssa Hockaday

**Environmental Specialist** 

Constellation Energy Generation, LLC

**Enclosures:** 

New Chemical Request Form for Hydrazine

New Chemical Request Form for TRASAR TRAC 103

New Chemical Request Form for Aluminum Sulfate

New Chemical Request Form for Potassium Sulfite

New Chemical Request Form for Boric Acid New Chemical Request Form for Lithium Hydroxide Notification Form for Sulfuric Acid Notification Form for Ammonium Hydroxide Notification Form for Sodium Hypochlorite

#### CC:

Debra Musser, Debra.Musser@constellation.com Craig Smith, Craig.Smith3@constellation.com Bonnie Pugh, Bonnie.Pugh@constellation.com



### **NEW CHEMICAL ADDITIVES REQUEST FORM**

Indicate who is submitting this form	n: 🛛 Permittee 🏻 [	Manufacturer							
	ellation Energy ration LLC	Facility Na	ame: TMI Unit 1						
Permit No.: PA000	09920	 Municipal		rry Twp					
Permit Effective Date: Nov 1	, 2007	County:	Dauphin C						
<del></del>	nistratively extended								
•	· · · · · · · · · · · · · · · · · · ·								
Trade Name of Chemical Addit	<b>ive</b> : Hydrazine	35%							
Manufacturer Name:	Arch Chen	nicals Inc.	s Inc.						
Intended Use(s):	Corrosion	Corrosion inhibator							
48-Hour LC <sub>50</sub> or EC <sub>50</sub>									
(for whole product):	0.46 mg/L	<u>-                                      </u>							
Species Tested: Ceriodar	ohnia sp. 🛭 Dap	hnia sp. 🔲 Simoce	ephalus sp.						
List All Product Ingredients:									
Constituent Name:		CAS#	Percent (%)	By Weight or Volume					
Hydrazine, monohydrate		7803-57-8	55						
		<del></del>							
		<u> </u>							
		Total:	100						
Analytical Method(s) That May be Used to Determine Effluent Concentration:	EPA 8270								
Method Detection Limit (mg/L):	_ 0.01								
I certify under penalty of law that this docu that qualified personnel gather and evaluat those persons directly responsible for gathe and complete. I am aware that there are s knowing violations. See 18 Pa. C.S. § 490 Name/Title Principal Executive	e the information submering the information, the ignificant penalties for a 4 (relating to unsworn f	nitted. Based on my inquir ne information submitted is submitting false informatio	ry of the person or pe is to the best of my kno on, including the possi executive Officer of	rsons who manage the system or owledge and belief, true, accurate bility of fine and imprisonment for					
Trevor L Orth / Plant Manag	er	um L' ()	<b>TX</b>	03/11/25					
Phone: 267-533-5559	Ema	il: <u>Trevo</u> r.Orth@Cor	nstellation.com						



#### **NEW CHEMICAL ADDITIVES REQUEST FORM**

Indicate who is submitting t	his form: 🔀 P	ermittee	☐ Manufacture	er					
Permittee Name:	Constellation Generation L		Faci	ility Name:	TMI Unit 1 Londonderry Twp				
Permit No.:	PA0009920			icipality:					
Permit Effective Date:	Nov 1, 2007		 Cou		Dauphin Co	· · · · · · · · · · · · · · · · · · ·			
Permit Expiration Date:	ely extende								
Trade Name of Chemical	Additive:	TRASAR 7	TRASAR TRAC103						
Manufacturer Name:	facturer Name: Nalco Com								
Intended Use(s):		Corrosion	n Inhibitor						
48-Hour LC <sub>50</sub> or EC <sub>50</sub> (for whole product):		3,026 mg	]/L						
Species Tested: 🛛 C	eriodaphnia s			Simocephal	us sp.				
List All Product Ingredie			· · —	·	·				
Constituent Name:			CAS#	Po	ercent (%)	By Weight or Volume			
Sodium Molybdate			7631-95-0	)	35	by weight			
			Total:		100				
Analytical Method(s) That be Used to Determine Ef Concentration:	fluent	n Chromato	graphy (IC) , Spe	ctrophotome	eter				
Method Detection Limit (	mg/L): IC	- 0.3 , Spect	rophotometer- 0	.2					
certify under penalty of law that that qualified personnel gather and hose persons directly responsible and complete. I am aware that the knowing violations. See 18 Pa. C.  Name/Title Principal Exc	I evaluate the inf for gathering the ere are significan S. § 4904 (relating ecutive Office)	ormation subr information, t t penalties for g to unsworn	mitted. Based on note information sub- submitting false in falsification).  gnature of Prince	ny inquiry of th mitted is, to the formation, incl	e person or per e best of my kno uding the possil tive Officer o	sons who manage the system or owledge and belief, true, accurate oility of fine and imprisonment for			
Trevor L Orth / Plant	Manager		1 ram L	TALL		03/11/25			
Phone: 267-533-5559		Em	ail: Trevor.Ort	h@Constella	tion.com				



#### **NEW CHEMICAL ADDITIVES REQUEST FORM**

Indicate who is submitting	this form: 🛛 F	Permittee 🔲 Ma	nufacturer					
Permittee Name:	Constellation Generation LL		Facility Name	TMI Unit 1				
Permit No.:	PA0009920		Municipality:		Londonderry Twp			
Permit Effective Date:	Nov 1, 2007		County:	Dauphin Co	·			
Permit Expiration Date:	Administrative	ely extended	•					
Trade Name of Chemical Additive:		Aluminum Sulfate	<u> </u>					
Manufacturer Name:		Univar						
Intended Use(s): 48-Hour LC <sub>50</sub> or EC <sub>50</sub>		Water Treatment						
(for whole product):		100 mg/L (C	arassius auratu	s) 96 hr				
. ,								
Species Tested: Co	eriodaphnia sp	o. 🔲 Daphnia s <sub>l</sub>	o. 🗌 Simocepha	ilus sp.				
List All Product Ingredie	nto:							
List All Floudet ingredie	1113.							
Constituent Name:			CAS# F	Percent (%)	By Weight or Volume			
Sulfuric acid, aluminum salt		10	0043-01-3	29-50	by weight			
Water		7	732-18-5	Balance	by weight			
<u> </u>								
<del></del>								
			Total:	100				
Analytical Method(s) That May be Used to Determine Effluent Concentration: EPA-NERL 375.2								
Method Detection Limit (	<b>mg/L)</b> :3-3	00						
that qualified personnel gather ar those persons directly responsib	nd evaluate the intolering aware that there is	formation submitted. the information, the i are significant penalti	Based on my inquiry of nformation submitted ies for submitting false	f the person or pe is, to the best o	with a system designed to assure ersons who manage the system or if my knowledge and belief, true, cluding the possibility of fine and			
Name/Title Principal Exe	ecutive Officer	Signature	of Principal Execu Authorized Age		r Date			
Trevor L Orth / Plant	Manager	1 rem	L' Dut		03/11/25			

## 3800-FM-BCW0486 Rev. 12/2019 pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

### COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF CLEAN WATER

Phone: 717-497-5357 Email: Trevor.Orth@Constellation.com



#### **NEW CHEMICAL ADDITIVES REQUEST FORM**

Permittee Name:	Constellation Energy Generation LLC		Facility Name	: TMI Unit 1	TMI Heit 1		
Permit No.:	PA0009920		Municipality:		Londonderry Twp		
Permit Effective Date:	Nov 1, 2007		County:	Dauphin C			
Permit Expiration Date:	Administrativ	alv extended	County.	Daupinii C	Danty		
connic Expiration Date.	Administrativ	cry exteriaed					
Trade Name of Chemical	Additive:	Potassium Sulfite	45% TECH				
Manufacturer Name:		Hydrite Chemical	Со				
ntended Use(s):		Neutralizing Agen	it				
18-Hour LC <sub>50</sub> or EC <sub>50</sub> for whole product):		1548.93 mg/L fa	athead minnow				
Species Tested: C	eriodaphnia sp	o. 🔲 Daphnia sp	o. Simoceph	alus sp.			
ist All Product Ingredie	nts:						
Constituent Name:			CAS#	Percent (%)	By Weight or Volume		
Potassium Sulfite		10	0117-38-1	~45	By Weight		
· <del>"</del>			Total:	100			
Analytical Method(s) Tha be Used to Determine Eff Concentration: Method Detection Limit (	EP   mg/L): 2	A Method 4500-SO					
be Used to Determine Eff Concentration:	fluent  EP mg/L): 2  his document was devaluate the info for gathering the ere are significant S. § 4904 (relating)	s prepared under my ormation submitted. Be information, the inform penalties for submitting to unsworn falsification.	direction or supervisio ased on my inquiry of ation submitted is, to ng false information, ir	the person or per he best of my kno- cluding the possi cutive Officer of	rsons who manage the system owledge and belief, true, accura bility of fine and imprisonment		



#### **NEW CHEMICAL ADDITIVES REQUEST FORM**

Indicate who is submitting th	nis form: 🛛 Pe	ermittee 🗌	] Manufa	acturer					
Permittee Name:	Constellation ( Generation LL)			Facility Name:		TMI Unit 1			
Permit No.:	PA0009920			Municipa		Londonder	erry Twp		
Permit Effective Date:	Nov 1, 2007		<del></del>	County:		Dauphin Co	<del></del>		
Permit Expiration Date:	Administrative								
Trade Name of Chemical	Additive:	Boric Acid (	Boray De	ecahydrate)					
Manufacturer Name:	Additive.	U.S. Borax I	Boric Acid (Borax Decahydrate)						
Intended Use(s):		Pressurized Water Reactor Treatment							
48-Hour LC <sub>50</sub> or EC <sub>50</sub>		Fressunzed Water Reactor Heatiment							
(for whole product):		5.7 mg/L	- EC10						
Species Tested: Ce	eriodaphnia sp	. 🛭 Daph	nnia sp.	☐ Simod	cephalu	ıs sp.			
List All Product Ingredie	nts:								
Constituent Name:			C	AS#	Pe	rcent (%)	By Weight or Volume		
Sodium tetraborate decahyd	rate		130	3-96-4		100	>99.4		
10									
							,		
			T	otal:		100			
Analytical Method(s) Tha be Used to Determine Eff Concentration:	fluent	A Method 60	)20B						
Method Detection Limit (	mg/L):								
certify under penalty of law that that qualified personnel gather and those persons directly responsible and complete. I am aware that the knowing violations. See 18 Pa. C.S.	l evaluate the info for gathering the in ere are significant	mation submit nformation, the penalties for si	tted. Base information ubmitting t	ed on my inqu on submitted false informat	uiry of the is, to the	e person or per best of my kno	sons who manage the system or wledge and belief, true, accurate		
Name/Title Principal Exe	ecutive Officer	Sign	nature o	f Principal Authorized		ive Officer o t	r Date		
Trevor L Orth / Plant	Manager		nm	LU	<u>/ / / / / / / / / / / / / / / / / / / </u>		03/11/35		
Phone: 267-533-5559		Email	l: Trev	or.Orth@Co	onstella	tion.com			



#### **NEW CHEMICAL ADDITIVES REQUEST FORM**

Indicate who is submitting this form:	⊠ Permittee ☐ Man	ufacturer						
Permit No.: PA00099 Permit Effective Date: Nov 1, Permit Expiration Date: Administration	2007	LC Facility Name: _ Municipality: _ County:		TMI Unit 1 Londonderry Twp Dauphin County				
Trade Name of Chemical Additive	: <u>Li-7 Lithium Hydro</u>	xide Monohydrate (7	LiOH*H2O)					
Manufacturer Name:	NUKEM Isotopes G	SmbH						
Intended Use(s): 48-Hour LC <sub>50</sub> or EC <sub>50</sub>	pH control	pH control						
(for whole product):	62.2 mg/L Zeb	rafish (Danio rerio)	96hr					
Species Tested:								
Constituent Name:		CAS# P	ercent (%)	By Weight or Volume				
Li-7 enriched		6576-68-6						
Natural enrichment	1	1310-66-3						
		Tatal	100					
		Total:	100					
Analytical Method(s) That May be Used to Determine Effluent Concentration:  Method Detection Limit (mg/L):  I certify under penalty of law that this document that qualified personnel gather and evaluate those persons directly responsible for gather accurate and complete. I am aware that imprisonment for knowing violations. See 16	the information submitted. nering the information, the there are significant penalt 3 Pa. C.S. § 4904 (relating to	Based on my inquiry of information submitted i ies for submitting false o unsworn falsification).	the person or post, to the best of information, incompation, incompatin, incompation, incompation, incompation, incompation, incompatio	ersons who manage the system or of my knowledge and belief, true, cluding the possibility of fine and				
Name/Title Principal Executive O	fficer Signature	e of Principal Execu Authorized Agei		Date				
Trevor L Orth / Plant Manager		L. CUT		03/11/45				



Phone: 717-497-5357 Email: <u>Trevor.Orth@Constellation.com</u>

## 3800-FM-BCW0487 Rev. 1/2021 Form pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

### COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF CLEAN WATER

#### CHEMICAL ADDITIVES NOTIFICATION FORM

Use this form to notify the DEP regional office that issued the NPDES permit of the new or increased use of chemical additives that were not reported in the NPDES permit application and are on DEP's Approved List (see <a href="https://www.dep.pa.gov/chemicaladditives">www.dep.pa.gov/chemicaladditives</a>). Use one form per chemical additive and discharge point.

Permittee Name:	Constellation Generation Ll		Facility Name:	TMI Un	i+ 1
Permit No.:	PA0009920		Municipality:		derry Twp
Permit Effective Date:	Nov 1, 2007		County:		n County
Permit Expiration	1100 1, 2007		County.	Daupriii	County
Date:	Administrative	ely extended			
Trade Name of Chemica Additive:		ULPHURIC ACIE	)		
Manufacturer Name:	_ N	orFalco LLC			
Intended Use(s):	N	leutralization Age	nt / pH Control		
Location(s) of Use:	C P	irculating Water reTreatment Sys	tem (RO / UF / DI tra	ailers)	
			95%) - Circulating V		
Frequency of Use:	3	ullulic Acid (1 - 5	0% )- Fre Treatmen	Coystein	- Continuous
Method of Introduction:	P	umped			
Treatment Following	P				7723000 - 72500
Introduction:		/A	~~~		× 4500
Dischaus Daint (Outfall		•	95%) - Outfall 001,	Sulfuric /	Acid (1 - 50% ) - Outfall 001
Discharge Point (Outfall	3 <del></del>	nd 701			- AH
Design Flow of Discharg	·	5.3			
Receiving Water Body N	2		amStats- https://stre	amstats.u	sgs.gov/ss/ , Workpace ID
Q <sub>7-10</sub> Flow of Stream (cfs	· —	A202411071937	06422000)		
Calculated WQBEL (mg/	•	.25	= ==		
Maximum Usage Rate:		26		Units:	gallons per day
Will Other Chemical Ad Introduced at the Same		YES [	] NO If YES, Nu	ımber: <u>Va</u>	ries; as-needed
system designed to assure inquiry of the person or p information, the information	e that qualified ersons who man n submitted is, nificant penalti	personnel gather anage the system to the best of my es for submitting	er and evaluate the m or those persons knowledge and bel g false information,	information directly rates including	ervision in accordance with a on submitted. Based on my responsible for gathering the accurate and complete. I am the possibility of fine and cation).
Name/Title Principal Exec	cutive Officer	Phone: 267-5	1 1 -	Signatu Office	re of Principal Executive er or Authorized Agent
Trevor L Orth / Plant Man	ager	Date: 03	11 25 /	Im	K. UM

## 3800-FM-BCW0487 Rev. 1/2021 Form Pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

### COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF CLEAN WATER

#### **CHEMICAL ADDITIVES NOTIFICATION FORM**

Use this form to notify the DEP regional office that issued the NPDES permit of the new or increased use of chemical additives that were not reported in the NPDES permit application and are on DEP's Approved List (see <a href="https://www.dep.pa.gov/chemicaladditives">www.dep.pa.gov/chemicaladditives</a>). Use one form per chemical additive and discharge point.

Permittee Name:	Constellation Generation			-	Name:	TMI Unit 1	
Permit No.:	PA0009920	)		Munici	pality:	Londonderry Twp	
Permit Effective Date: Nov 1, 20		7		County:	Dauphin County		
Permit Expiration Date:	Administrat	ively extende	ed				
Trade Name of Chemica	l Additive:	Ammonium	Hydroxi	de			
Manufacturer Name:		Thermo Fis	her Scie	ntific			
Intended Use(s):		pH Control					
Location(s) of Use:		Reactor Sys	stem				
Frequency of Use:		1 applicatio	n / 2yr				
Method of Introduction:		Manual					
Treatment Following Int	roduction:	N/A					
Discharge Point (Outfall	No.):	001					
Design Flow of Discharg	je (MGD):	25.3					
Receiving Water Body Name:		Susquehanna River 2,640 (USGS StreamStats- https://streamstats.usgs.gov/ss/ , Workpace ID					
Q <sub>7-10</sub> Flow of Stream (cfs	s):	PA2024110				amotato.aogo.govoo, , vvontpaco 12	
Calculated WQBEL (mg/	L):	0.0028					
Maximum Usage Rate:		1.4				Units: gallons per day	
Will Other Chemical Ad Introduced at the Same		⊠ YES		NO	If YES, N	umber: <u>Varies; as-needed</u>	
system designed to assure inquiry of the person or pr information, the information	e that qualifiersons who in submitted in initial pena violations. S	ed personne manage the s, to the bes alties for sub ee 18 Pa. C.	el gather system t of my k omitting	and eva or those enowledg false in 4 (relatin	aluate the e persons ge and be formation,	ion or supervision in accordance with a information submitted. Based on my directly responsible for gathering the lief, true, accurate and complete. I am including the possibility of fine and corn falsification).  Signature of Principal Executive Officer or Authorized Agent	
Trevor I Orth / Plant Man	aner	Date:	30	11 /25	<del></del>	T. O.A.	

# 3800-FM-BCW0487 Rev. 1/2021 Form pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

### COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF CLEAN WATER

#### CHEMICAL ADDITIVES NOTIFICATION FORM

Use this form to notify the DEP regional office that issued the NPDES permit of the new or increased use of chemical additives that were not reported in the NPDES permit application and are on DEP's Approved List (see <a href="https://www.dep.pa.gov/chemicaladditives">www.dep.pa.gov/chemicaladditives</a>). Use one form per chemical additive and discharge point.

Permittee Name:	Constellation Energy Generation LLC		Facility Name:	TMI Unit 1			
Permit No.:	PA0009920		Municipality:	<del></del>			
Permit Effective Date:	Nov 1, 2007		County:	Londonderry Twp			
	Administratively extended		County.	Dauphin County			
Permit Expiration Date:	Auministrati	rely extended					
Trade Name of Chemical	Additive:	Sodium hypochlo	orite				
Manufacturer Name:		Kuehne Chemica	al Company, Inc.				
Intended Use(s):	_	Biocide					
Location(s) of Use:	-	PreTreatment sy	stems (001 / 701)	r (001 / 006) and Filteration/			
Frequency of Use:		001/701 - As nee		/ 006- 2hrs application/day and			
Method of Introduction:	-	Pumped	<u>, , , , , , , , , , , , , , , , , , , </u>				
Treatment Following Intr	oduction:	N/A					
Discharge Point (Outfall	-	001, 001 / 006 and 001 / 701					
Design Flow of Discharg		25.3					
Receiving Water Body Name:		Susquehanna River					
,		2,640 (USGS StreamStats- https://streamstats.usgs.gov/ss/ , Workpace ID					
Q <sub>7-10</sub> Flow of Stream (cfs)	-	PA20241107193706422000 )					
Calculated WQBEL (mg/l	<b>-)</b> : _	0.0011					
Maximum Usage Rate:	-	0.6		Units: gallons per day			
Will Other Chemical Ad Introduced at the Same T			□ NO If YES, NL	umber: <u>Varies; as-needed</u>			
system designed to assur inquiry of the person or p information, the informatio	e that qualifie ersons who in submitted is nificant pena violations. Se	ed personnel gath manage the syste i, to the best of m ties for submittin	ner and evaluate the em or those persons by knowledge and beling false information, 904 (relating to unswo	on or supervision in accordance with a information submitted. Based on my directly responsible for gathering the ef, true, accurate and complete. I am including the possibility of fine and orn falsification).  Signature of Principal Executive Officer or Authorized Agent			
Trevor L Orth / Plant Mana	ger	Date: 03	111   25 1	Trans L. With			