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UNCLASSIFIED
SUPPLEMENTARY NOTES over program reads: Phase I Inspection Report, National Dam Inspection Program; owever, the official title of the program is: National Program for Inspection of on-Federal Dams; use cover date for date of report. KEY WORDS (Continue on reverse olds if necessary and identify by block number) DAMS. INSPECTION. DAM SAFETY.



CE MAGUIRE, INC. 31 Canal Street, Providence, Rhode Island 02903

Tel. 401/272-6000 Telex: 92-7533 Cable: CEMI

August 13, 1980

Department of the Army New England Division **Corps of Engineers** 424 Trapelo Road Waltham, MA 02154

Re: Inspection and Evaluation of Non-Federal Dams FY-80 Connecticut and Rhode Island Contract No. DACW33-80-C-0013

Attn: Mr. P. Gould

Gentlemen:

EAR/jg

In accordance with Paragraph 4.a.2.d. of Appendix "A" of the above referenced contract, we hereby, respectfully, submit the following letter report which outlines our reclassification of Lower Ross Pond Dam (CT 00175) to a LOW HAZARD classification.

We trust the information provided is adequate for your staff to agree with our reclassification to LOW HAZARD for this dam. If you have any questions regarding the enclosed data, please contact the undersigned.

It is our understanding that an amendment will be issued by you to our contract, dropping the need for a full study report for both Lower Ross Pond Dam (CT 001752) and Moswamsicut Pond Dam (RI 02002).

Very truly yours, Accession For NTIS GRA&I CE MAGUIRE, INC DTIC TAB Unannounced Justification E. A. Reed, P.E. By. Distribution/ Availability Codes Avail and/or Special Dist





1. Description of the Project

- a. Location: Lower Ross Pond Dam is located in Ross Pond State Park in the Town of Killingly, Windham County, Connecticut, approximately four miles west of the Rhode Island-Connecticut State Boundary along U.S. Route 6. Coordinates of the dam are approximately 41°46.7'N Latitude and 71°51.9'W Longitude. The dam impounds water from a .74-square mile watershed which includes Upper Ross Pond. The terrain is undeveloped, wooded, and moderately sloped.
- Ъ. Description of Dam and Appurtenances: The dam at Lower Ross Pond is approximately 600 feet long, 6 feet high, and is an earth embankment with a downstream stone masonry-concrete capped face. The earth fill section varies in width from 3 to 10 feet along the upstream face and has varying slopes into the The downstream face of the dam is vertical. There are pool. two uncontrolled overflow spillways about 128 feet apart through the dam. The easterly spillway is a masonry and concrete capped weir 12.5 feet long. Short masonry training walls lead into the reservoir pool and channel overflows to the weir The downstream channel is Half Hill Brook which section. meanders through wooded terrain. The westerly spillway weir is 13 feet wide and also has training walls leading into the pond. The easterly spillway crest is approximately 2 feet below the westerly spillway crest. There is no outlet works for the dam.
- c. <u>Size Classification</u>: Ross Pond Dam has an impoundment capacity at the top of the dam (Elev. 335.5 feet NGVD) equal to 40 Ac-Ft. and a height of dam of 7.0 feet. In accordance with the guideline criteria established by the Corps of Engineers, this dam is classified as SMALL in size. The height and impoundment capacity both were the governing criteria in the determination of the SMALL classification.
- d. <u>Hazard Classification</u>: The dam is classified as a LOW HAZARD structure because its failure will not cause: any loss of lives, damage to dwellings, or disruption to public utilities located in the path of the failure flow. The dam failure discharge of 1,386 CFS will have a maximum water depth of approximately 5.0 feet for a distance of 4,000 feet in the impacted area. This small depth of flow will not cause adverse flooding conditions downstream. At a distance of 4,000 feet from the dam, the flooding and depth of flow will diminish to normal acceptable flow conditions and the total outflow of 30 Ac-Ft. will be contained in the available storage downstream.
- e. <u>Ownership</u>: Lower Ross Pond is owned by the State of Connecticut and is managed by the Department of Environmental Protection, Region 4.

The dam is managed by: Mr. John Olsen, Director Division of Conservation and Preservation State of Connecticut Region 4

and

Operations:

f.

Mr. John Folsom Unit Manager Mashamoquet State Park Pomfret, CT 203/928-6121

- g. Purpose of the Dam: Recreation.
- h. Design and Construction History: The Lower Ross Pond Dam was constructed in the early 1900's. The State of Connecticut purchased both the upper and lower ponds and adjacent lands in June, 1964, and developed Ross Pond State Park. Records of construction are limited; however, it is known that the State in June, 1968, constructed a new gatehouse and drop spillway in the upper pond and regraded the public beach and parking area, also at the Upper Ross Pond. Trees growing adjacent to the lower dam were cut or removed during this contracted work. No record of any other work at the lower dam has been maintained.
- i. <u>Normal Operating Procedures</u>: There are no operating procedures for Lower Ross Pond Dam.

2. Hydraulic/Hydrologic Features

a. Test Flood Analysis: Recommended guidelines for the Safety Inspection of Dams by the Corps of Engineers were used for selection of the "Test Flood". This Dam is classified under those guidelines as a LOW HAZARD and SMALL size structure. Guidelines indicate that a 50-year to 100-year frequency storm event be used as range of test floods for such classifications. The watershed has a total drainage area of 0.74 square miles. This drainage area is unpopulated, largely wooded, and hilly with rolling terrain. The basin average slope is 0.018 feet/ foot which can be called moderate to flat. The watershed's overall terrain can be classified as rolling. A "test flood" equal to the 100-year frequency event was calculated to equal 400 CSM or 296 CFS for the drainage area. The routed outflow discharge was also developed using the Corps of Engineers criteria for approximate routing and found to be 250 CFS. The upper range (100 year) test flood was selected because of the recreational value of the Pond. Additional design data developed for this investigation is listed in tabular form at the end of this section. The spillway rating curve is illustrated in Appendix D. Flood routings were performed with assumed initial conditions of full a reservoir (ie; spillway crest elevation.)

The spillway capacity is hydraulically inadequate to pass the "test flood" (100-year) and this flow would overtop the by approximately 0.40 feet assuming the overflow length of the dam was equal to 100 feet. The inflow and routed outflow discharge value for this test flood are 296 CFS and 250 CFS, respectively. The maximum outflow capacity of the spillway without overtopping the dam is 142 CFS which is 57 percent of the routed test flood outflow.

b. <u>Dam Failure Analysis</u>: An instantaneous full-depth partial width breach of 40 feet was assumed to have occurred in this dam. This will result in an unsteady flow phenomenon with one flood wave travelling up into the reservoir to feed the other wave travelling downstream into the valley.

With the impounded water level at the top of the dam (Elevation 335.5 feet), the calculated dam failure discharge is 1,386 CFS, and it will produce an approximate water surface elevation of 334.5 feet immediately downstream from the dam. This will raise the water surface an estimated 4.0 feet above the depth of water just prior to failure when the discharge is 142 CFS. The dam failure analysis covered the reach extending from the dam to a distance of 2,000 feet downstream. Normal uniform flow, following Manning's formulae will occur at that point.

On the assumption that the route I-52 highway embankment structure which is located 2,000 reet downstream from the dam will contain the failure wave, the depth of flow will change from 5.0 feet to 2.0 feet due to the large downstream storage available. The failure discharge will diminish as the reservoir is emptied and depth decreased. River valley storage and frictional losses will tend to reduce the discharge and flow velocities in this reach. Water surface elevations due to the failure of the dam have not been computed because the anticipated depth of flow of 5.0 feet is very small and large storages are available.

LOWER ROSS POND DAM

Inflow, Outflow and Surcharge Data

FREQUENCY IN YEARS	24-HOUR TOTAL RAINFALL IN INCHES	24-HOUR* EFFECTIVE RAINFALL IN INCHES	MAXIMUM INFLOW IN C.F.S.	MAXIMUM** OUTFLOW IN C.F.S.	SURCHARGE HEIGHT IN FEET	SURCHARGE STORAGE ELEVATION
100	7.0	4.6	296	250	2 0	335.9
= Test Fl	ood	4.0	230	230	2.3	

*Infil	tration	assumed as	s 0.1"	'/hc	our				
**Lake	assumed	initially	full	at	spillway	crest	elevation	333.0	
(top	of dam =	= 335.5	50) ·				

NOTES:

- 1. Q₁₀₀; inflow discharges were computed by the approximate methodology of the Soil Conservation Service.
- 2. Maximum capacity of the spillway without overtopping the dam elevation (333.5) is equal to 142 C.F.S.
- 3. All discharges indicated are dependent upon the continued integrity of upstream storage reservoirs.
- 4. Surcharge storage is allowed to overtop the dam when exceeding the spillway capacity.
- 5. Test flood = 100-year frequency PMF = 400 CSM = 296 CFS (D.A. = 0.74 sq. miles).

Table:





APPENDIX





C-1 Crest of Dam looking from right abutment

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C-2 Crest of Dam looking towards right abutment



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'C-7 Left spillway



C-8 Left spillway





C-9 Uprooted tree at toe of Masonry Dam

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C-10. Tree stump at toe of dam



· C-11 Downstream channel

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Size Classification	LOWER ROSS POND DAN	<u>/</u>
ight of dam =7.0	ft.; hence	6MALL
orage capacity at top of dam	(elev.335.50) =	O_AC-FT.; hence SMAL
opted size classification	SMALL	·
Hazard Potential		
Lower Ross Pond	Dam is classified as a	LOW hazard
potential structure	because it's failure	may not cause
any loss of life o	r appreciable property	damage. There
is no development	in the path of the failure	e flow. Failure
discharge will be	contained within the s	torage areas
available between	o the dam and Route T	-52 without causing
		. JE WITHOUT COUSING
and appreciable ac	image	·
Adopted Classifications	<u>SIZE</u>	TEST FLOOD RANGE
. Adopted Classifications AZARD LOW	<u>SIZE</u> SMALL	TEST FLOOD RANGE 50-100 year frequency
. Adopted Classifications AZARD LOW dopted Test Flood = <u>100-ye</u>	<u>SIZE</u> SMALL ar Frequency Flood PMF =	TEST FLOOD RANGE 50-100 year frequency 400 cst
Adopted Classifications AZARD LOW dopted Test Flood = <u>100-ye</u>	<u>SIZE</u> SMALL ar Frequency Flood PMF = -	<u>TEST FLOOD RANGE</u> 50-100 year frequency 400 cst 296 cfs
 <u>Adopted Classifications</u> <u>AZARD</u> <u>LOW</u> dopted Test Flood = <u>100 - yes</u> <u>Overtopping Potential</u> <u>Drainage Area</u> 	<u>SIZE</u> SMALL ar Frequency Flood PMF = _ = _	<u>TEST FLOOD RANGE</u> 50-100 year frequency 400 cst 296 cfs 0.74 sq. mile
Adopted Classifications AZARD LOW dopted Test Flood = 100-ye Overtopping Potential Drainage Area Spillway crest elevation	<u>SIZE</u> SMALL ar Frequency Flood PMF = = =	<u>TEST FLOOD RANGE</u> 50-100 year frequency 400 cst 296 cfs 0.74 sq. mile 333.0 NGVI
Adopted Classifications AZARD LOW dopted Test Flood = <u>100-ye</u> <u>Overtopping Potential</u> Drainage Area Spillway crest elevation Top of Dam Elevation =	<u>SIZE</u> SMALL ar Frequency Flood PMF = _ =	<u>TEST FLOOD RANGE</u> 50-100 year frequency 400 cst 296 cfs 0.74 sq. mile 333.0 NGVI 335.5 NGV
Adopted Classifications ZARD LOW Nopted Test Flood = 100 - ye Overtopping Potential Drainage Area Spillway crest elevation Top of Dam Elevation = Eximum spillway discharge spacity without overtopping of test flood" inflow discharge	<u>SIZE</u> <u>SMALL</u> <u>ar Frequency Flood</u> PMF = = of dam =	<u>TEST FLOOD RANGE</u> 50-100 year frequency 400 cst 296 cF 0.74 sq. mile 333.0 NGV 335.5 NGV 142 CFS 296 CFS
Adopted Classifications Adopted Classifications AZARD LOW Nopted Test Flood = 100-yes Overtopping Potential Drainage Area Spillway crest elevation Top of Dam Elevation = Eximum spillway discharge spacity without overtopping of test flood" inflow discharge test flood" outflow discharge	<u>SIZE</u> <u>SMALL</u> <u>ar Frequency Flood</u> PMF = _ = = of dam = =	TEST FLOOD RANGE 50-100 year frequency 400 csi 296 cfs 0.74 sq. mill 333.0 NGVI 335.5 NGV (42 cfs 296 cfs 296 cfs
 Adopted Classifications AZARD LOW dopted Test Flood = <u> 00-ye</u> <u>Overtopping Potential</u> Drainage Area Spillway crest elevation Top of Dam Elevation = aximum spillway discharge apacity without overtopping of test flood" inflow discharge test flood" overflow car y spillway without overtopping 	<u>SIZE</u> <u>SMALL</u> <u>ar Frequency Flood</u> PMF = = of dam = e = rried ng =	<u>TEST FLOOD RANGE</u> <u>50-100 year frequency</u> <u>400</u> cst <u>296</u> CFS <u>0.74</u> sq. mile <u>333.0</u> NGV <u>335.5</u> NGV <u>142</u> CFS <u>296</u> CFS <u>296</u> CFS <u>296</u> CFS <u>250</u> CFS
Adopted Classifications AZARD LOW dopted Test Flood = 100-yes Overtopping Potential Drainage Area Spillway crest elevation Top of Dam Elevation = aximum spillway discharge apacity without overtopping of test flood" inflow discharge test flood" outflow discharge of "test flood" overflow can y spillway without overtopping test flood" outflow discharge of "test flood" overflow can y spillway without overtopping test flood" outflow discharge test flood" outflow discharge of "test flood" outflow discharge hich overflows over the dam	SIZE SMALL ar Frequency Flood PMF = of dam = rried ng = ge portion	<u>TEST FLOOD RANGE</u> <u>50-100 year frequency</u> <u>400</u> cst <u>296</u> cFs <u>0.74</u> sq. mile <u>333.0</u> NGV <u>335.5</u> NGV <u>142</u> cFs <u>296</u> cFs

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D-2

<u>14, ct.</u>	Iralnage arca pled by storage voirs	infall = 4.6 Inche srate - Flat	minutes	<u>ntrolled</u> tion) = 3.0		of test flood outfle			teristics ation (Adopted) Qna	CFS	14	250		rre computed	•	•
Killin	les of d or occu reser	stive Ra	06	- UN Co		57	o ,	00	v Charac Vpproxim	In ft.	13	5.9		values a nes.	•	•
umoʻt'	sq. m ¹ s swampy	hence.		l fall- rge = 13	۱	= Sd	233		Outflow Third A Sa	In In.	12	0.754		scharge guldelli		
Brook	-	CFS1 Re 0.018	Ę	vertica		42 c	8	te for Dan	eristics ation	r:p∠ CFS	'n	1		tflow dl. t per COB	. ●	•
Half Hil		296 5	centratic	veir - 1			levation	discharg	V Charact Approxim	in ft.	10	1		8: AB	•	•
ı of Dam	slope	M = Basin cl	e of Conc	flow v	1	- = buiq	· Crest E	ient of	Outflow Second	22 In In.	6	9 0		HON	•	
, Location	derate	400 CS	tles, Tim	d - over		t Overtopi	Spillway	= Coeffic	eristics tion	tn in.	8	PLATE		Inches	• • • • •	•
d	ed ; mo	- T	square M	creste		/ Without	5	iet, c	r Charactu pproximat	ul In ft.	2	SEE		torage in	• • • •	•
d Dan	wood	ัน (เพล _่ กวนอกชิ	10158	3road	 , ;	Spillway	10 10 10	too fe	Outflow First A	Vp1 CFS	9	1		j s ⊨ st		
Pon.	Rucali	year Fre	volr = 0	$\lim_{x \to 1} \frac{1}{x} = \frac{1}{x}$	MTTIDE T	sity of	levation	of Dam 📕	eristics	50 in in.	5	00.1		je height	, • ,	٠
SON J	ization	1-001 = p	a vuross. of Reser	of Spill	MIGUN O	mum Capac	of Dam E	Length	Inflow Charact	h ₀ in feet	4	о. О		Surcharg	_ ●	•
LOWE	laracter	st" floo(nage Area ace Area	and Type	11 12)	Maxin	Top	rtion of	Flood	CFS	m	296		irge, h=	_ ~	
of Dam	rshed Cl	led "te	, = Drai. = Surfa	Shape	I			cflow po.	e Test Ωp	CSM	2	100-yr = 400	200	= Dische	_ ●	•
Name	Water	Adop	D.A. S.A.		D-3	3		Over	Name of	Dam	-	Dam Ross	rower	o ^p "		

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LOWER	R055	POND	DAM

COMPUTATIONS FOR SPILLWAY RATING CURVE AND OUTLET RATING CURVE COMPUTATIONS

	S	spill	way widt	h =	12.0	feet;	Spill	way cre	est eleva	tion .	- 333.0	NGVE
Length o	£ è	iam =			100	feet	; Top o	of dam e	elevation	- 2	35.5	NGVE
с		=	30	for	dam ar	nd spil	way					

SPILLWAY RATING CURVE COMPUTATIONS

Elevation (ft.) NGVD	Spillway Discharge (CFS)	Remarks
333.0	. 0	Spillway Crest Elevation
335.5	12.7	
334.0	36.0	
3345	66.0	
335.0	102.0	
335.5	142.0	Top of Dam Elevation
335.9	177.7	Test Flood Elevation
336.0	293.0	
336.5	536.0	

ii)

i)

OUTLET RATING CURVE COMPUTATIONS

Elevation (ft.) NGVD	Discharge (CFS)	Remarks	_ •	
	There is no outlet works for Lower Ross Pond Dam		- -	
			-	
Size of out Invert of o	let =; Area utlet =; Cente	of outlet =sq. ft. r line of outlet =	. •	•
• • • •	D-4 • • • • •	• • • • • •	٠	

NAME OF DAM: Lower Ross Pond Dam

ESTIMATING EFFECT OF SURCHARGE STORAGE ON "TEST FLOOD"

- This routing of floods through the reservoir was carried out according to the Α. guidelines established by the Corps of Engineers in Phase 1 Inspection for Dam Safety Investigations issued in March, 1978.
- **B**. Formulas used are as follows:
 - $Q = C_1 B_1 H_1^{3/2}$ $Q = C_1 B_1 [h_2 + F.B.]^{3/2} + C_2 B_2 h_2^{3/2}$ 1. For no overtopping: For overtopping: For open channel flow: N/A For orifice flow: N/A where C, = coefficient of discharge for spillway; B, = length of spillway Cz = coefficient of discharge for dam; Bz = length of dam h = head over spillway crest (feet); hz = head over dam in feet F.B. = distance between spillway creat and top of dam
 - ii. Surcharge storage in inches = $S = 12 (h_1 + h_2) \frac{S.A.}{D.A.} = 0.26 h$ where S.A. = surface area = 0.0158 5g.mi. D.A. = drainage area = 0.74 sq. mi.
 - iii. $Q_{outflow} = Q_{inflow} (1 \frac{S}{Re});$ where $Q_{inflow} = 295CFS; R_e = 4.6''$
 - overflow Portion) iv. Length of dam =) 100 feet; Top of Dam elev. = 335.50; c for dam = 3.0 Length of spillway = 12.0 feet; Spillway crest = 333.0; c for spillway = 3.0

0 in CFS Elevation Total Head Remarks Storage in over crest inches = S $h_1 + h_2 = h$ 278 334.0 1.0 0.26 270 334.5 0.39 1.5 262 335.0 0.52 2.0 253 335.5 2.5 0.65 245 336.0 3.0 0.78 237 336.5 3.5 0.91 0.754 " 250 2.9 335.9

Qinflow = 295 C.F.S.

v.

D-5



"Rule of Thumb Guidance for Estimating Downstream Dam Failure Discharge"

BASIC DATA

ainage area =O.~	<u>74 sq</u> .	mi., Top of dam	335.5 teet	NGV
illway type = <u>Broad</u> crested c	overflow we	if Crest of spillway	y <u>333.0</u>	NGVD
rface area at crest elevation =	10.10 Ac	res = 0.0158 :	sg.miles	
servoir bottom near dam =	328.5	feetNGVD		
sumed side slopes of embankments	·	2:1		
opth of reservoir at dam site		= y _o =	7.0	ft
d-height elevation of dam m			332.0	NGV
ength of dam at crest =			105 fee	+
ength of dam at crest =			105 fee 100 feet	t t
ength of dam at crest = ength of dam at mid-height = O of dam length at mid-height =	W _b =		105 fee 100 fee 40 fee	+ + +
ength of dam at crest = ength of dam at mid-height = 2 of dam length at mid-height =	Wb =		105 fee 100 fee 40 fee	+ + +
ength of dam at crest = ength of dam at mid-height = 2 of dam length at mid-height = Elevation (NGVD)	Wb =	Estimated Storage in	105 fee 100 fee 40 fee AC-FT	+ + +
ength of dam at crest = ength of dam at mid-height = 2 of dam length at mid-height = Elevation (NGVD) 326.0	Wb =	Estimated Storage in	105 fee 100 fee 40 fee AC-FT	+ + +
ength of dam at crest = ength of dam at mid-height = 2 of dam length at mid-height = Elevation (NGVD) 326.0 333.0	W _b = 0 40	Estimated Storage in Spillway Crest	105 fee 100 fee 40 fee AC-FT Elevation	+ +
ength of dam at crest = ength of dam at mid-height = 2 of dam length at mid-height = Elevation (NGVD) 326.0 333.0 334.0	₩ _b = 0 40 50	Estimated Storage in Spillway Crest	105 fee 100 feet 40 fee AC-FT Elevation	+ + +
ength of dam at crest = ength of dam at mid-height = 2 of dam length at mid-height = Elevation (NGVD) 326.0 333.0 334.0 335.0	Wb = 0 40 50 60	Estimated Storage in Spillway Crest	105 fee 100 fee 40 fee AC-FT Elevation	+ +
ength of dam at crest = ength of dam at mid-height = 2 of dam length at mid-height = Elevation (NGVD) 326.0 333.0 334.0 335.0 335.5	W _b = 0 40 50 60 70	Estimated Storage in Spillway Crest Top of Dam E	105 fee 100 fee 40 fee AC-FT Elevation	+ +

Failure Discharge = $\frac{8}{27}$ W_B $\sqrt{9}$ y₀^{1.5} = 1.68 W_B y₀^{1.5} = 1244 Maximum Spillway Discharge = 142 C.F.S. Total Failure Discharge = 1386 C.F.S. NOTE: Dam failure analysis is not carried out due to two reasons a.) depth of flow is hardly 5.0 feet b.) 30 AC-FT of storage volume is very small D-7

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[21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21] [21]	6 2 NEAREST DOWNSTREAM Data Data <thdata< th=""></thdata<>	POPULAR NAME NAME OF IMPOUNDMENT 0N 8 10 111213141516171161020222232245526527382932333425804512535124555655126556616576666576666576666576666576666576737387387387387587587587587585565165766665666666676666576773747577 0N 8 10 111213141516171161928222232245556527322932333435867187573738738858661657666656566666666667666657673747577 0N 8 10 11121314151617116192822223224555652732283232333435867187573738758555655566576666657673728738758757387587587587587585566616576666676773774757774757774757774757774757774757774757774775777475777475777777	NMME NAME 0NVSION 055 55 55 55 55 55 55 55 N 05 05 05 05 05 05 05 05 05 N 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 05 <th>[2] [3] [4] [5] [1] [1] [1] [1] [2] [3] [4] [5] [6] [1] [8] REPORT</th> <th>FORM APPROVED FORM APPROVED MURSUART 1 INVENTORY OF DAMS IN THE UNITED STATES PART 1 INVENTORY OF DAMS IN THE UNITED STATES MURSUART 70 PUBLIC LAW 92-367) REQUIREMENTS CONTROL SYMBOL See reverse side for instructions. Date-CWE-17</th> <th>псоилования соитвод втавод 111 111 111 111 101 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 <td< th=""><th>[2] [3] [4] [5] [6] [7] [4] [1] [1] [1] [4] [4] [4] [4] [1] [1] [4] [4] [4] [4] [4] [1] [1] [1] [4] [4] [4] [4] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [2] [1] [1] [1] [1] [2] [2] [1] [1] [1] [1] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2]</th></td<></th>	[2] [3] [4] [5] [1] [1] [1] [1] [2] [3] [4] [5] [6] [1] [8] REPORT	FORM APPROVED FORM APPROVED MURSUART 1 INVENTORY OF DAMS IN THE UNITED STATES PART 1 INVENTORY OF DAMS IN THE UNITED STATES MURSUART 70 PUBLIC LAW 92-367) REQUIREMENTS CONTROL SYMBOL See reverse side for instructions. Date-CWE-17	псоилования соитвод втавод 111 111 111 111 101 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 <td< th=""><th>[2] [3] [4] [5] [6] [7] [4] [1] [1] [1] [4] [4] [4] [4] [1] [1] [4] [4] [4] [4] [4] [1] [1] [1] [4] [4] [4] [4] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [2] [1] [1] [1] [1] [2] [2] [1] [1] [1] [1] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2]</th></td<>	[2] [3] [4] [5] [6] [7] [4] [1] [1] [1] [4] [4] [4] [4] [1] [1] [4] [4] [4] [4] [4] [1] [1] [1] [4] [4] [4] [4] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [2] [1] [1] [1] [1] [2] [2] [1] [1] [1] [1] [2] [2] [2] [2] [2] [2] [2] [2] [2] [2]
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