

Dianne M. Triplett

April 1, 2021

VIA ELECTRONIC FILING

Adam J. Teitzman, Commission Clerk Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, Florida 32399-0850

> Re: Petition by Duke Energy Florida, LLC, to Approve Transaction with Accelerated Decommissioning Partners, LLC, for Accelerated Decommissioning Services at the CR3 Facility, etc.; Dkt. No. 20190140-EI

Dear Mr. Teitzman:

Enclosed for filing on behalf of Duke Energy Florida, LLC ("DEF") in the abovereferenced Docket, please find the attached correspondence received from Accelerated Decommissioning Partners (ADP) on March 29, 2021. This correspondence is being provided to you pursuant to Order No. PSC-2020-0289-FOF-EI, dated August 27, 2020, issued in the abovereferenced Docket.

Please let me know if you have questions about filing or if you need additional information. Thank you for your assistance in this matter.

Sincerely,

/s/ Dianne M. Triplett

Dianne M. Triplett

DMT/cmk Enclosures

cc: Parties of Record



17101 Preston Road, Suite 115 | Dallas, TX 75248

Scott E. State, P.E., Chief Nuclear Officer sstate@NorthStar.com | 0.682.503.2240 | c.303.898.8035

> 10 CFR 50.82 10 CFR 50.75

March 29, 2021 3F0321-06

U.S. Nuclear Regulatory Commission Attn: Document Control Desk Washington, DC 20555-0001

Subject: Crystal River 3 – Annual Decommissioning and Irradiated Fuel Management Financial Status Report for 2020

References:

- Letter, Duke Energy Florida, LLC to USNRC, "Application for Order Consenting to Direct Transfer of Control of Licenses and Approving Conforming License Amendment," dated June 14, 2019 (ML19170A194)
- Letters, ADP CR3, LLC to USNRC, "Crystal River Unit 3 Nuclear Generating Plant Notification of Revised Post-Shutdown Decommissioning Activities Report, dated June 26, 2019, and Supplemental Information in Support of Revised Post Shutdown Decommissioning Activities Report and Decommissioning Cost Estimate, dated December 26, 2019 (ML19177A232 and ML20006F022)
- Letter, USNRC to Duke Energy Florida, LLC, "Crystal River Unit 3 Nuclear Generating Plant Order Approving Transfer of Licensed Authority from Duke Energy Florida, LLC to ADP CR3, LLC and draft conforming administrative license amendment (EPID L-2019-LLA-0135)," dated April 1, 2020 (ADAMS Accession Nos. ML20069A023, ML20069A024. ML20069A025, ML20069A026, ML20069A027, ML20101G582 and ML20101G583)
- Letter, USNRC to Duke Energy Florida, LLC, "Crystal River Unit 3 Nuclear Generating Plant – Issuance of Amendment No. 258 RE: Order Approving Transfer of Licensed Authority from Duke Energy Florida, LLC to ADP CR3, LLC and Conforming License Amendment (EPID L-2019-LLA-0135)," dated October 1, 2020 (ML20253A343)
- 5. Letter, ADP CR3 to USNRC, "Crystal River 3 ISFSI Decommissioning Trust," dated October 28, 2020 (ML20302A453)
- Letter, ADP CR3 to USNRC, "Application for Order Approving Indirect Transfers of Control of Licenses in Connection with Internal Corporate Reorganization," dated November 19, 2020 (ML20324A058)

Page 2 of 3

Dear Sir or Madam:

10 CFR 50.75(f)(1) requires each shutdown power reactor licensee to annually report to the NRC the status of their decommissioning financial assurance by March 31.

10 CFR 50.82(a)(8)(v) & (vii) require that after submitting its site-specific decommissioning cost estimate pursuant to 10 CFR 50.82(a)(4)(i), a licensee must annually submit to the NRC, by March 31, a report on the status of its decommissioning expenditures, remaining costs and funding assurance levels, as well as a report on the status of its funding for managing irradiated fuel.

A change to the spent fuel management strategy was described by Duke Energy Florida, LLC (DEF), ADP CR3, LLC (ADP CR3), and ADP SF1, LLC (ADP SF1) in the application for license transfer (Reference 1) and was approved by the NRC in Reference 3. Under the terms of the license transfer, ADP CR3 became the NRC operator licensee responsible for all activities under the Crystal River Unit 3 Nuclear Plant (CR3) license. Under a Purchase and Sale Agreement (PSA) with DEF as part of the license transfer, ADP SF1 acquired the ISFSI, its associated equipment, the high-level radioactive and greater than Class C (GTCC) waste, and title to the spent nuclear fuel. DEF also assigned to ADP SF1 its Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste with the U.S. Department of Energy (DOE). ADP SF1 entered into an operating agreement with ADP CR3, to possess and maintain the ISFSI, its associated equipment, and spent nuclear fuel.

As the NRC owner licensee, DEF continues to own the CR3 facility, with the exception of the assets described above, and its nuclear decommissioning trust (NDF). In addition to maintaining the NDF, DEF is responsible for disbursement of funds to pay for the costs of decommissioning as work is completed.

As a result of the PSA, after October 1, 2020, funding for spent fuel management costs for CR3 is no longer provided by the NDF. Funding for spent fuel management is provided by the ADP SF1 parent companies, NorthStar and Orano. The projected irradiated fuel management costs were submitted with the revised PSDAR in Reference 2, and an updated cash flow analysis was included in Reference 6. A dedicated ISFSI Decommissioning Trust Fund has been established by ADP SF1 in accordance with the Order approving the license transfer as described in Reference 5.

Accordingly, ADP CR3, LLC, hereby submits the status of its decommissioning financial assurance (Attachment 1), the estimated costs to complete decommissioning and financial assurance demonstration (Attachment 2), and the projected cash flow analysis for irradiated fuel management (Attachment 3) for Crystal River Nuclear Plant. All or most of the spent fuel management costs are a liability of the U.S. Government as a result of its breach of the spent fuel disposal contract.

U. S. Nuclear Regulatory Commission March 29, 2021 3F0321-06

This letter contains no new regulatory commitments.

If you have any questions regarding this submittal, please contact Mr. Mark Van Sicklen, ADP CR3, LLC Licensing Manager, at (352) 436-5572.

Sincerely,

ADP CR3, LLC

Scott E. State, P.E. Chief Nuclear Officer

Attachments:

Attachment 1 – CR3 Annual Decommissioning Financial Status Report for 2020

Attachment 2 – CR3 Estimate of Costs to Complete Decommissioning and Financial Assurance Demonstration

Attachment 3 – CR3 Projected Cash Flow Analysis for Irradiated Fuel Management

cc: NMSS Project Manager
 Regional Administrator, Region I
 ADP: Gregory G. DiCarlo, Jeff Adix, Sam Shakir, Geoff Wilde
 Duke Energy: Terry Hobbs, Tracey LeRoy

DOCKET NUMBERS 50-302 / 72-035 LICENSE NUMBER DPR – 72

ATTACHMENT 1

CR3 ANNUAL DECOMMISSIONING FINANCIAL STATUS REPORT FOR 2020

ADP CR3, LLC Status of Decommissioning Funding Crystal River Nuclear Plant As of December 31, 2020 – 10 CFR 50.75(f)(1) and 10 CFR 50.82(a)(8)(v)

10 CFR 50.75(f)(1)

	1 7
1. Minimum Financial Assurance (MFA)	\$450,186 ^[Note 1]
2. ISFSI Obligation as of 12/31/2020	\$5,407 ^[Note 2]
 Decommissioning Trust Fund Balance as of 12/31/2020 	\$635,904 ^[Note 3]
4. A schedule of the annual amounts remaining to be collected	\$28,126 [Note 4]
5. Assumptions used in determining rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections.	2% annual real rate of return per 10 CFR 50.75(e)(1)(i)
 Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v) 	None
7. Modifications occurring to a licensee's current method of providing financial assurance since the last submitted report	Financial Support Agreements from NorthStar Group Services, Inc. and Orano USA LLC, a Provisional Trust, and an ISFSI Decommissioning Trust have been established as described in the Safety Evaluation Report for the CR-3 License Transfer (ML 20101G583)
8. Any material changes to trust agreements	NDF subaccounts were created to establish an "IOI Decommissioning Account" and a "Crystal River Reserve Account" as described in the Safety Evaluation Report for the CR-3 License Transfer (ML 20101G583)

- Note 1: This amount is based upon total DECON expenditures for radiological remediation and license termination set forth in the updated Decommissioning Funding Assurance Plan and PROMPT DECON analysis provided in Attachment 2 (Column 1 plus Column 2). This is the amount of decommissioning funds estimated to be required for remaining License Termination Costs.
- Note 2: ISFSI Obligation is funded by the ISFSI Decommissioning Trust Account(See Table 2.1).
- Note 3: NDF Balance \$614,029 plus Provisional Trust Balance \$21,875.
- Note 4: Reflects ADP contributions pursuant to the terms of the Decommissioning Services Agreement (DSA). The DSA requires ADP contributions equal to 6% of each payment from Company Funds for invoices issued for work performed after October 1, 2020 until the Provisional Fund balance reaches \$50,000 in cash. \$28,126 reflects ADP's remaining obligation as of 12.31.2020, which will be funded from the amount in line 3 as work is completed.

ADP CR3, LLC Status of Decommissioning Funding Crystal River Nuclear Plant As of December 31, 2020 – 10 CFR 50.75(f(1) and 10 CFR 50.82(a)(8)(v)

10 CFR 50.82(a)(8)(v) & (vi)	(Thousands of Dollars)
 Cumulative decommissioning spending through 12/31/2020 	\$190,705 ^[Note 1]
2. 2020 decommissioning spending	\$79,823 ^[Note 2]
3. Decommissioning Trust Fund & Provisional Trust Fund Total as of 12/31/2020	\$635,904 ^[Note 3]
4. Additional planned contributions to the Provisional Trust Account	\$28,126 [Note 4]
5. Estimated costs to complete from the latest	\$450,186
estimate.	(See #1 above in 10 CFR 50.75 information)
	ADP CR3 has projected the cost of managing irradiated fuel until title to the fuel and possession of the fuel is transferred to the Department of Energy based on the assumption that DOE pickup of fuel no later than 2037. The cost analysis is provided in Attachment 3.
 Estimate based on unrestricted release of the site per 10 CFR 20.1402 	See Attachment 2
7. Modifications to Financial Assurance Since Last Report	Financial Support Agreements from NorthStar Group Services, Inc. and Orano USA LLC, a Provisional Trust, and an ISFSI Decommissioning Trust have been established as described in the Safety Evaluation Report for the CR-3 License Transfer (ML 20101G583)
8. Any material changes to trust agreements	NDF subaccounts were created to establish an "IOI Decommissioning Account" and a "Crystal River Reserve Account" as described in the Safety Evaluation Report for the CR-3 License Transfer (ML 20101G583)

- Note 1: Cumulative Spending (\$110,882) through 12.31.2019 per DEF Report, dated March 19, 2020 (3F0320-03) plus 2020 decommissioning spending (\$79,823).
- Note 2: Represents the amount actually disbursed from the fund for calendar year 2020.
- Note 3: NDF Balance \$614,029 plus Provisional Trust Balance \$21,875.
- Note 4: Reflects ADP contributions pursuant to the terms of the Decommissioning Services Agreement (DSA). The DSA requires ADP contributions equal to 6% of each payment from Company funds for invoices issued for work performed after October 1, 2020 until the Provisional Fund balance reaches \$50,000 in cash. \$28,126 reflects ADP's remaining obligation as of 12.31.2020, which will be funded from the amount in line 3 as work is completed.

DOCKET NUMBERS 50-302 / 72-035 LICENSE NUMBER DPR – 72

ATTACHMENT 2

CR3 ESTIMATE OF COSTS TO COMPLETE DECOMMISSIONING AND FINANCIAL ASSURANCE DEMONSTRATION

CR3 ESTIMATE OF COSTS TO COMPLETE DECOMMISSIONING AND FINANCIAL ASSURANCE DEMONSTRATION

Table 2.1

	Crystal River Unit 3 Nuclear Power Station - PROMPT DECON Methodology								
	Annual Cash Flow Analysis - Total License Termination and Site Restoration - TABLE 2.1								
			(Thousar	nds of 2021 Dolla	ars) - See column o	lefinitions belov	/		
	Column 1 Column 2 Column 3 Column 4 Column 5 Column 6 Column 7 Column 8 Column 9						Column 9		
Year	License Termination Cost (ADP-Contractor)	License Termination Cost (DEF-Owner)	Site Restoration Cost	Total Expenses	Beginning of Period Funded Balance (NDF + PT)	NDT Withdrawals	Net Incremental Contributions & (Distributions) Provisional Trust	Annual Earnings on Fund	End-Of-Year Fund Balance
2021	\$101,496	\$1,788	\$250	\$103,534	\$635,904	\$103,534	\$8,343	\$10,647	\$551,360
2022	\$106,077	\$1,511	\$5,220	\$112,808	\$551,360	\$112,808	\$6,678	\$8,771	\$454,002
2023	\$103,946	\$1,541	\$1,055	\$106,542	\$454,002	\$106,542	\$6,300	\$6,949	\$360,709
2024	\$65,753	\$1,572	\$1,693	\$69,018	\$360,709	\$69,018	\$4,047	\$5,834	\$301,572
2025	\$42,799	\$1,603	\$5,988	\$50,390	\$301,572	\$50,390	\$2,758	\$5,024	\$258,964
2026	\$11,343	\$1,635	\$25,836	\$38,814	\$258,964	\$38,814	\$0	\$4,403	\$224,553
2027	\$0	\$680	\$0	\$680	\$224,553	\$18,919	-\$55,878	\$4,113	\$153,868
2028	\$0	\$694	\$0	\$694	\$153,868	\$694	\$0	\$3,063	\$156,238
2029	\$0	\$708	\$0	\$708	\$156,238	\$708	\$0	\$3,111	\$158,641
2030	\$0	\$722	\$0	\$722	\$158,641	\$722	\$0	\$3,158	\$161,077
2031	\$0	\$736	\$0	\$736	\$161,077	\$736	\$0	\$3,207	\$163,548
2032	\$0	\$751	\$0	\$751	\$163,548	\$751	\$0	\$3,256	\$166,053
2033	\$0	\$766	\$0	\$766	\$166,053	\$766	\$0	\$3,306	\$168,592
2034	\$0	\$781	\$0	\$781	\$168,592	\$781	\$0	\$3,356	\$171,167
2035	\$0	\$797	\$0	\$797	\$171,167	\$797	\$0	\$3,407	\$173,778
2036	\$0	\$813	\$0	\$813	\$173,778	\$813	\$0	\$3,459	\$176,424
2037	\$0	\$829	\$0	\$829	\$176,424	\$829	\$0	\$3,512	\$179,107
2038	\$0	\$846	\$0	\$846	\$179,107	\$846	\$0	\$3,565	\$181,826
TOTAL	\$431,414	\$18,772	\$40,042	\$481,785	\$635,904	\$508,467	-\$27,752	\$82,142	\$181,826

Table 2.1 Definitions:

<u>Column 1:</u>	License Termination Cost - (ADP-Contractor) Reflects the Total Annual License Termination Plan cost for ADP (Contractor) in 2021 dollars at a 2% escalation rate.
Column 2:	License Termination Cost – (DEF-Owner) Reflects the Total Annual License Termination Plan cost for DEF (Owner) in 2021 dollars at a 2% escalation rate.
<u>Column 3:</u>	Site Restoration Cost: Reflects the Annual Site Restoration Plan cost in 2021 dollars at a 2% escalation rate.
Column 4:	Total Expenses Reflects Total Expenses (Column 1 plus Column 2 plus Column 3)
<u>Column 5:</u>	 Beginning of Period Funded Balance Reflects the Funded Balance as of January 1 of each year thereafter. The Funded Balance includes the Nuclear Decommissioning Trust (NDF), plus the Provisional Trust (PT)) January 1, 2021 Beginning of Period Funded Balances equal \$630,119 NDF Balance plus \$21,875 PT Balance
<u>Column 5:</u>	 NDF Withdrawals Reflects the annual expenditures from the NDF in 2021 dollars at a 2% escalation rate. \$18,919 estimated withdrawal on January 1, 2027 reflects Total Expenses (\$680) plus final payment for achievement of the ISFSI-Only Interim End-State Conditions (\$18,239) pursuant to Section 9.3.4 of the Decommissioning Services Agreement (DSA) dated May 29, 2019 and Amended October 1, 2020.
<u>Column 6:</u>	ADP Net Incremental Contributions (Distributions) – Provisional Trust Reflects ADP incremental contributions and (distributions) pursuant to the terms of the DSA.
<u>Column 7:</u>	Annual Earnings on Funds Reflects earnings on funds remaining in the trust. A 2% Earnings rate is used over a 0% cost escalation rate. The annual 2% earnings are calculated on the Beginning Balance (Column 4) minus 100% of withdrawals (Column5) plus 100% of contributions (Columns 6) multiplied by the 2% annual earnings rate.
<u>Column 8:</u>	End of Year Fund Balance Reflects the End-of-Year Trust Fund Balance. - (Column 5 minus Column 6 plus Column 7 plus Column 8)

DOCKET NUMBERS 50-302 / 72-035 LICENSE NUMBER DPR – 72

ATTACHMENT 3

CR3 PROJECTED CASH FLOW ANALYSIS FOR IRRADIATED FUEL MANAGEMENT

CR3 PROJECTED CASH FLOW ANALYSIS FOR IRRADIATED FUEL MANAGEMENT

Table 3.1

Crystal River Unit 3 Nuclear Power Station - PROMPT DECON Methodology							
	Annual Cash Flow Analysis - ISFSI Decommissioning - Table 3.1 (Thousands of 2021 Dollars) - See column definitions below						
Column 1 Column 2 Column 3 Column 4 Column 5 Column 6							
Year	Spent Fuel Management - ISFSI Demo	Beginning of Period Fund Balance	ADP Withdrawals	ADP Distributions	Annual Earnings on Fund	End-Of-Year Fund Balance	
2021	\$0	\$3,950	\$0	\$0	\$79	\$4,029	
2022	\$0	\$4,029	\$0	\$0	\$81	\$4,110	
2023	\$0	\$4,110	\$0	\$0	\$82	\$4,192	
2024	\$0	\$4,192	\$0	\$0	\$84	\$4,276	
2025	\$0	\$4,276	\$0	\$0	\$86	\$4,361	
2026	\$0	\$4,361	\$0	\$0	\$87	\$4,449	
2027	\$0	\$4,449	\$0	\$0	\$89	\$4,538	
2028	\$0	\$4,538	\$0	\$0	\$91	\$4,628	
2029	\$0	\$4,628	\$0	\$0	\$93	\$4,721	
2030	\$0	\$4,721	\$0	\$0	\$94	\$4,815	
2031	\$0	\$4,815	\$0	\$0	\$96	\$4,912	
2032	\$0	\$4,912	\$0	\$0	\$98	\$5,010	
2033	\$0	\$5,010	\$0	\$0	\$100	\$5,110	
2034	\$0	\$5,110	\$0	\$0	\$102	\$5,212	
2035	\$0	\$5,212	\$0	\$0	\$104	\$5,317	
2036	\$0	\$5,317	\$0	\$0	\$106	\$5 <i>,</i> 423	
2037	\$5,407	\$5,423	\$5,407	-\$16	\$0	\$0	
TOTAL	\$5,407	\$3,950	\$5,407	-\$16	\$1,473	\$0	

Table 3.1 Definitions:

Column 1:	License Termination Cost Reflects the Total ISFSI Decommissioning cost in 2021 dollars at a 2% escalation rate.
Column 2:	Beginning of Period Funded Balance Reflects the Funded Balance as of January 1 of each year.
Column 3:	ADP Withdrawals Reflects the annual expenditures from the fund in 2021 dollars at a 2% escalation rate.
Column 4:	ADP Distributions Reflects distribution of residual ISFI Decommissioning funds upon completion of the ISFSI decommissioning.
<u>Column 5:</u>	Annual Earnings on Funds Reflects earnings on funds remaining in the trust. A 2% Earnings rate is used over a 0% cost escalation rate. The annual 2% earnings are calculated on the Beginning Balance (Column 2) minus 100% of withdrawals (Columns 3) minus 100% of distributions (Columns 5) multiplied by the 2% annual earnings rate.
Column 6:	 End of Year Fund Balance Reflects the End-of-Year Trust Fund Balance. - (Column 2 minus Column 3 plus Column 4 plus Column 5)

CR3 PROJECTED CASH FLOW ANALYSIS FOR IRRADIATED FUEL MANAGEMENT

Table 3.2

	Crystal River Unit 3 Nuclear Power Station - PROMPT DECON Methodology						
	Annual Cash Flow Analysis - Irradiated Fuel Management - Table 3.2						
	(Thousands of 2021 Dollars) - See column definitions below						
	Column 1 Column 2 Column 3 Column 4 Column 5 Column 6 Column 7						
Year	Spent Fuel Management Costs	Beginning of Period Fund Balance	ADP Withdrawals	ADP Incremental Contributions (Distributions)	DOE Cost Recovery	Annual Earnings on Fund	End-Of-Year Fund Balance
2021	\$9,931	\$0	\$9,931	\$10,500	\$0	\$3	\$572
2022	\$19,770	\$572	\$19,770	\$19,750	\$0	\$3	\$554
2023	\$9,617	\$554	\$9,617	-\$600	\$10,191	\$3	\$531
2024	\$8,464	\$531	\$8,464	-\$5,000	\$19,770	\$34	\$6,871
2025	\$8,634	\$6,871	\$8,634	\$0	\$9,617	\$39	\$7 <i>,</i> 894
2026	\$8,806	\$7 <i>,</i> 894	\$8,806	\$0	\$17,379	\$82	\$16,549
2027	\$12,302	\$16,549	\$12,302	\$0	\$8,806	\$65	\$13,119
2028	\$12,548	\$13,119	\$12,548	\$0	\$12,601	\$66	\$13,237
2029	\$12,799	\$13,237	\$12,799	\$0	\$12,548	\$65	\$13,051
2030	\$13,055	\$13,051	\$13,055	\$0	\$12,799	\$64	\$12,859
2031	\$13,316	\$12,859	\$13,316	\$0	\$13,372	\$65	\$12,980
2032	\$13,583	\$12,980	\$13,583	\$0	\$13,316	\$64	\$12,777
2033	\$13,854	\$12,777	\$13,854	\$0	\$13,583	\$63	\$12,568
2034	\$14,131	\$12,568	\$14,131	\$0	\$14,191	\$63	\$12,690
2035	\$14,414	\$12,690	\$14,414	\$0	\$14,131	\$62	\$12,470
2036	\$14,702	\$12,470	\$14,702	\$0	\$14,414	\$61	\$12,242
2037	\$79,214	\$12,242	\$79,214	-\$123	\$67,094	\$0	\$0
TOTAL	\$279,143	\$0	\$279,143	\$24,527	\$253 <i>,</i> 815	\$801	\$0

Table 3.2 Definitions:

Column 1: Column 2:	Spent Fuel Management CostsReflects the Total Annual Spent Fuel Management cost in 2021 dollars at a 2%escalation rate.Beginning of Period Funded BalanceReflects the Funded Balance as of January 1 of each year.
<u>Column 3:</u>	ADP WithdrawalsReflects the annual expenditures from the Irradiated Fuel Management Accountin 2021 dollars at a 2% escalation rate paid by ADP SF1 pursuant to the SNFServices Agreement dated October 1, 2020.
<u>Column 4:</u>	ADP Incremental Contributions (Distributions) Reflects ADP incremental contributions and (distributions).
<u>Column 5:</u>	 DOE Cost Recovery Reflects Cost Recovery from DOE for breach of the Standard Contract in 2020 dollars at a 2% escalation rate. Year 2023: \$10,191 recovery reflects initial NorthStar DOE settlement for costs incurred from 2020 thru 2021 Year 2037: \$67,094 reflects NorthStar DOE settlement for costs incurred in 2036 and 2037. (excludes recovery DOE Fuel Loading Costs - \$21,415 incurred in 2037)
<u>Column 7:</u>	Annual Earnings on Funds Reflects earnings on funds remaining in the account. A 2% Earnings rate is used over a 0% cost escalation rate. The annual 2% earnings are calculated on the Beginning Balance (Column 4) minus 100% of withdrawals (Column5) plus 100% of contributions (Columns 6) multiplied by the 2% annual earnings rate.
<u>Column 8:</u>	End of Year Fund BalanceReflects the End-of-Year Trust Fund Balance (Column 2 minus Column 3 plus Column 4 plus Column 5 plus Column 6)