



(REFERENCE COPY - Not for submission)

# FCC Form 399: Reimbursement Request

Facility **69397** | Service: **DTV** | Call **WUNP-TV** | Channel: **27 (UHF)** |  
ID:  
File **0000026701**  
Number:  
FRN: **0001910066** | Date **07/24**  
Submitted: **/2019**

## Applicant Information

### Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
<b>University of North Carolina</b>	PO Box 14900 Research	+1 (919)	fcc_notice@unctv. org	Government Entity
Doing Business As:	Triangle Park,	549-		
University of North Carolina	NC 27709 United States	7000		

## Reimbursement Contact Information

### Reimbursement Contact Name and Information

Applicant	Address	Phone	Email
[Confidential]			

## Preparer Contact Information

### Preparer Contact Name and Information

Applicant	Address	Phone	Email
<b>Donald Smith</b>	Donald Smith	+1 (919)	dsmith@unctv.
<i>Director of New Technologies</i>	10 T.W. Alexander	549-7000	org
<i>Compliance &amp; Planning</i>	Drive		
<i>University of North Carolina</i>	Research Triangle		
<i>Center for Public Television</i>	Park, NC 27709 United States		

**Broadcaster  
Information  
and  
Transition  
Plan**

Question		Response
Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.		No
Briefly describe transition plan		The transition plan is to construct an interim facility at the existing site. The interim facility would be used when operation on the new channel begins. After that the necessary changes would be made to the primary transmission system.

**Transmitters**

Section	Question	Response
Transmitter Related Expenses	Do you have transmitter related expenses?	Yes

**Auxiliary  
Transmitter****Add Transmitter Information**

Section	Question	Response
<b>Existing Transmitter Description</b>	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	Aux
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
<b>Existing Transmitter Manufacturer and Type</b>	Manufacturer	
	Model	DHD45P2
	Year	2001
	Type	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power Capacity	10.5 kW

**Auxiliary  
Transmitter**

**New Transmitter Costs**

Section	Question	Response
New Transmitter	Use	Auxiliary (Backup)
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Manufacturer	
	Model	ULXTE-20
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	11.75 kW
	Justification for New Transmitter	The transmitter manufacturer has indicated that components necessary to modify the transmitter for operation on its new channel are no longer available and it will not be able to provide re-channelization services for the transmitter. See attached letter

**Auxiliary  
Transmitter**

**Other Transmitter Costs**

Section	Question	Response
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<b>Electrical Service</b>	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	Yes
	Power	150 kVA
	Rigid Conduit and Wiring	Yes
	Size	2 inches
	Length	120.0 feet
	Other Electrical Service	Yes
	Description	Electrical feed disconnects and other items necessary to meet electrical code requirements
<b>HVAC Service</b>	Does the replacement transmitter require HVAC Service?	No
	Type	N/A
	Size	N/A
	Other Size	N/A
<b>Transmitter Building Addition/Modification or Leasehold Improvement</b>	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
<b>Channel 14 Costs</b>	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

<b>Auxiliary</b>	<b>Other Transmitter Cost Not Listed</b>
<b>Transmitter</b>	Information not provided.

**Primary  
Transmitter**

**Existing Transmitter Information**

Section	Question	Response
<b>Existing Transmitter Description</b>	Type of change	Purchase New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
<b>Existing Transmitter Manufacturer and Type</b>	Manufacturer	
	Model	DCX-2
	Year	2001
	Type	Inductive Output Tube
	IOT Power Type	Two
	Power Capacity	40 kW

**Primary  
Transmitter**

**New Transmitter Costs**

Section	Question	Response
New Transmitter	Use	Primary (Main)
	Change Type	Purchase New
	Is this a request for upgraded equipment?	Yes
	Manufacturer	
	Model	ULXTE-60
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	34 kW
	Justification for New Transmitter	The transmitter manufacturer has indicated that components necessary to modify the transmitter for operation on its new channel are no longer available and it will not be able to provide re-channelization services for the transmitter. See attached letter

**Primary  
Transmitter**

**Other Transmitter Costs**

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	No



	Switchgear (industrial 800 amp)	Yes
	Transformer (480V)	Yes
	Power	150 kVA
	Rigid Conduit and Wiring	Yes
	Size	2 inches
	Length	150.0 feet
	Other Electrical Service	Yes
	Description	Electrical feed disconnects and other items necessary to meet electrical code requirements
<b>HVAC Service</b>	Does the replacement transmitter require HVAC Service?	No
	Type	N/A
	Size	N/A
	Other Size	N/A
<b>Transmitter Building Addition/Modification or Leasehold Improvement</b>	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
<b>Channel 14 Costs</b>	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

**Primary Transmitter**      **Other Transmitter Cost Not Listed**  
Information not provided.

**Antennas**

Section	Question	Response
Antenna Related Expenses	Do you have antenna related expenses?	Yes

## Auxiliary Antenna

### Add Antenna Information

Section	Question	Response
Existing Antenna Description	Type of change	Purchase New
	Antenna Use	Auxiliary (Backup)
	Description of Use	Aux
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this antenna currently shared with any other stations?	No
	Is this antenna directional?	No
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Horizontal
	Type	Slotted Coaxial
	Number of Stations Supported	N/A
	Number of Panels	N/A
	Design power capacity in use	N/A
	Lower Limit	N/A
	Upper Limit	N/A
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	205.7 kW

Manufacturer	
Model	ATW24HS3- HSO-36S
Year	2008

## Auxiliary Antenna

### New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Auxiliary (Backup)
	Description of Use	Interim Facility and Eventual Auxiliary
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	No
	Is antenna directional?	No
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna Manufacturer and Types	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Slotted Coaxial
	Number of Stations Supported	N/A
	Number of Panels/Bays	N/A
	Lower Limit	N/A
	Upper Limit	N/A
	Design power capacity in use	N/A
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	312.0 kW

Manufacturer	
Model	SAA22-O3-G200-ES4R-27
Year	2019
Justification for New Antenna	The antenna can only operate on channel 36. The replacement antenna will be initially used as part of the interim facility during the transition. Following the transition it will become a permanent auxiliary antenna.

## Auxiliary Antenna

### Other Antenna Costs

Section	Question	Response
<b>Combiner for Shared Antenna</b>	Do you need a Combiner for a Shared Antenna?	No
	Type	
	Number of channels supported	N/A
	Frequencies of channels supported	N/A
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	N/A

<b>Elbow Complex</b>	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	Single Channel
	Feed Line Size	4 1/16 inches inches
<b>Side Mount Brackets</b>	Do you require the separate purchase of side mount brackets for a high power antenna?	Yes
<b>Pattern Scatter Analysis</b>	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	Yes
<b>Sweep Test</b>	Do you require the sweep testing of transmission line and antenna?	Yes

## Auxiliary Antenna

### Other Antenna Cost Not Listed

Information not provided.

**Primary  
Antenna**

**Existing Antenna Information**

Section	Question	Response
<b>Existing Antenna Description</b>	Type of change	Purchase New
	Antenna Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing antenna shared with another station or stations?	No
	Is the existing antenna directional?	No
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
<b>Existing Antenna Manufacturer and Type</b>	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Slotted Coaxial
	Number of Stations Supported	N/A
	Number of Panels	N/A
	Design power capacity in use	N/A
	Lower Limit	N/A
	Upper Limit	N/A
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power) .....	125.0 kW



Manufacturer	
Model	TFU-15JTH /VP-R O4
Year	2010

Primary  
Antenna

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Primary (Main)
	Description of Use	N/A
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	No
	Is antenna directional?	No
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna Manufacturer and Types	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Slotted Coaxial
	Number of Stations Supported	N/A
	Number of Panels/Bays	N/A
	Lower Limit	N/A
	Upper Limit	N/A
	Design power capacity in use	N/A
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power) .....	248.0 kW
	Manufacturer	

Model	SAA14-O4A-G300-ET5R-27
Year	2019
Justification for New Antenna	The antenna is a single channel slotted pylon style antenna. It cannot operate on a channel other than what it was designed, channel 36. The only viable option is to replace the antenna.

## Primary Antenna

### Other Antenna Costs

Section	Question	Response
<b>Combiner for Shared Antenna</b>	Do you need a Combiner for a Shared Antenna?	No
	Type	
	Number of channels supported	N/A
	Frequencies of channels supported	N/A
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	N/A
<b>Elbow Complex</b>	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	Single Channel

	Feed Line Size	6 1/8 inches inches
<b>Side Mount Brackets</b>	Do you require the separate purchase of side mount brackets for a high power antenna?	No
<b>Pattern Scatter Analysis</b>	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
<b>Sweep Test</b>	Do you require the sweep testing of transmission line and antenna?	Yes

**Primary  
Antenna**

**Other Antenna Cost Not Listed**

Information not provided.

**Transmission Line**

Section	Question	Response
Transmission Line Related Expenses	Do you have transmission line related expenses?	Yes

# Auxiliary Transmission Line

## Add Transmission Line

Section	Question	Response
Existing Transmission Line Description	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	Interim and Eventual Auxiliary
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmission currently shared with any other stations?	No
	Is Transmission Line in operating condition?	Yes
Existing Transmission Line Manufacturer and Type	Manufacturer	
	Type	Rigid
	Diameter	3 1/8 inches
	Other Diameter	N/A
	Segment Length	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	800 feet per run

Auxiliary  
Transmission Line

New Transmission Line

Section	Question	Response
New Transmission Line Costs	Use	Auxiliary (Backup)
	Description of Use	Interim and Eventual Auxiliary
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Type	Rigid
	Diameter	4 1/16 inches
	Other Diameter	N/A
	Segment Length	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	800 feet per run

	Justification for New Transmission Line	Constructing a viable interim facility with meaningful coverage area requires a system with increased power handling capability. This is best addressed by replacing the transmission line with higher power handling capability. See transition plan narrative
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**Auxiliary Transmission Line**      **Other Transmission Line Expenses Not Listed**  
Information not provided.



**Tower  
Equipment  
And  
Rigging  
Costs**

Section	Question	Response
Tower Equipment or Rigging Costs Changes	Do you have tower equipment or rigging costs changes?	Yes

**Primary  
Tower**

**Existing Tower**

Section	Question	Response
Existing Tower Description	Type of change	Move Equipment
	Tower Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Is this tower consider Complex?	No
	Is this tower currently shared with any other stations?	No
	One or more FM, AM or TV radio broadcaster(s)	N/A
	Others Types of Users	N/A
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	Yes
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1014576
Coordinates (NAD83 ( North American Datum of 1983))	Latitude (NAD83)	36° 17' 29.2" N-
	Longitude (NAD83)	077° 50' 09.4" W-
	Overall Structure Height	1143.03 feet
	Support Structure Height	1112.19 feet
	Ground Elevation Above Mean Sea Level (AMSL)	284.12 feet

	Structure Type	TOWER - Free Standing or Guyed Structure
	Tower Owner	UNIVERSITY OF NORTH CAROLINA
	Date Constructed	05/13/2011

**Primary Tower**

**Tower Rigging Costs**

Section	Question	Response
<b>Tower Rigging Costs</b>	Complex Tower	N/A
<b>Helicopter Services Required</b>	Are helicopter services required?	No

**Primary Tower**

**Other Tower Expenses Not Listed**

Information not provided.

**Outside  
Professional Services Costs**

Section	Question	Response
<b>Outside Project Management Services</b>	Do you require outside project management services?	Yes
	Number of Hours	120
	Explanation	Because the transmission site is owned by the State of North Carolina, it is subject to various state construction project rules. One rule is the hiring of a designer to create submittals for project review and approval by the state.
<b>Outside RF consulting Engineering Services</b>	Perform engineering study for new channel assignment and antenna development	Yes
	Prepare engineering section of Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare engineering section of Form FCC License to Cover Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	1

	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A
	Terrain-Shielded Facility	N/A
<b>Attorney and Other Outside Consulting Services</b>	Prepare and file Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	1
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	Yes
	FAA Consultation (including preparation of FAA Form 7460)	Yes
	Negotiation of Lease and other Matter for Shared Locations	No
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	Yes
<b>RF Field Engineering Services</b>	Comprehensive coverage verification via field study	No
	RF exposure measurements	No
	Additional Field Engineering Service	No
	Number of Days	N/A

	Justification	N/A
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Outside Professional Services Costs

Other Professional Services Expenses Not Listed

Name	Description
Additional Legal Expenses	Legal expenses for non-catalog advice and review, including transition status reports and other miscellaneous legal needs.
Tower Structural Analysis	Required by State Building Code

## Other Expenses

Section	Question	Response
<b>AM Pattern Disturbance</b>	Is an Impact Study needed?	No
	Is Remediation needed?	No
<b>Facility Expenses</b>	Name	N/A
	Other Distributed Transmission System Expenses Not listed	N/A
	Name	N/A
	Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
<b>Permit and Filing Costs</b>	Local Zoning	No
	Non-zoning permits	No
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	No
	FCC License to Cover Application	No
	FCC Special Temporary Authority Application	No
<b>Other Miscellaneous Expenses</b>	Does this relocation require paying Disposal Costs (for equipment and other waste, net of any salvage value)?	Yes
	Does this relocation require Equipment Delivery or Handling Charges not otherwise included in individual item costs?	No
	Does this relocation require Equipment Storage?	No
	Does this relocation require the Development and Airing of an Announcement regarding an upcoming channel change?	Yes
	Does this relocation require MVPD Notification of a Channel Change?	Yes

<b>Other Expenses</b>	<b>Other Expenses Not Listed</b>
	Information not provided.

## Cost Information

### Transmitters

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
<b>Primary Transmitter ULXTE-60</b>	<b>\$1,082,650.00</b>	<b>\$1,079,350.00</b>		<b>\$455,197.56</b>	
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 34 kW	<i>\$1,000,000.00</i>	\$1,000,000.00	A quote from Comark for a replacement IOT transmitter is attached. That quote is substantially higher than the catalog pricing amount for the proposed solid state transmitter. The proposed transmitter should be eligible for full reimbursement.	\$452,285.15	N/A
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	\$2,912.41	N/A
2" Rigid Conduit and Wiring (Cost per foot)	\$3,900.00	\$3,750.00	N/A	N/A	N/A



Other Electrical Service: Electrical feed disconnects and other items necessary to meet electrical code requirements	<b>\$15,000.00</b>	\$15,000.00	Estimate for non- categorized items necessary to meet electrical code requirements	N/A	N/A
<b>Auxiliary Transmitter ULXTE-20</b>	<b>\$548,070.00</b>	<b>\$522,200.00</b>		<b>\$237,104.94</b>	
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	\$1,958.60	N/A
2" Rigid Conduit and Wiring (Cost per foot)	\$3,120.00	\$3,000.00	N/A	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	\$494,500.00	\$470,000.00	N/A	\$235,146.34	N/A
Other Electrical Service: Electrical feed disconnects and other items necessary to meet electrical code requirements	<b>\$24,900.00</b>	\$24,900.00	Estimate for non- categorized items necessary to meet electrical code requirements	N/A	N/A
<b>Sub-total</b>	<b>\$1,630,720.00</b>	<b>\$1,601,550.00</b>	N/A	<b>\$692,302.50</b>	N/A

<b>Total for all systems</b>	\$2,715,115.00	\$2,543,653.30	N/A	\$1,145,805.24	N/A
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## Components

<b>Actual Information</b>	
<b>Description</b>	<b>File Name</b>
Switchgear - industrial 800 amp	Information not provided.
UHF - Liquid Cooled Solid State Transmitter 34 kW	<p><b>Component Description:</b> 50% Transmitter &amp; Installation, Installation included w /Transmitter on Form 399. Purchase Order includes all 11 sites. Transformer on line 16 of Quote is separate Form 399 Line Item.</p> <p><b>Amount:</b> \$452,285.15</p>
Transformer 3 phase/480v - 150 KVA	<p><b>Component Description:</b> 50% Transformer included with Transmitter Cost on Invoice. See Quote line item 16. Purchase Order is for all 11 Sites.</p> <p><b>Amount:</b> \$2,912.41</p>
2" Rigid Conduit and Wiring (Cost per foot)	Information not provided.
Other Electrical Service: Electrical feed disconnects and other items necessary to meet electrical code requirements	Information not provided.

Transformer 3 phase/480v - 150 KVA	<div data-bbox="719 174 1378 405"> <b>Component Description:</b> 50% of Transformer on Line 17 of quote is included with Transmitter Cost on Invoice. </div> <div data-bbox="719 495 1278 528"> <b>Amount:</b> Purchase Order is for all 11 sites. \$1,958.60 </div>
2" Rigid Conduit and Wiring (Cost per foot)	Information not provided.
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	<div data-bbox="719 779 1378 1335"> <b>Component Description:</b> Aux. Transmitter. Credit for transformer applied with transmitter per FCC Hotline (Paige 7/8/2019) due to system error. Invoice due date corrected to vendor terms (net 60). See attachment pgs. 2-4 for summary. </div> <div data-bbox="719 1339 1294 1373"> <b>Amount:</b> \$96,392.55 </div> <div data-bbox="719 1480 1347 1989"> <b>Component Description:</b> 50% Aux Transmitter &amp; Installation (Installation included w /Transmitter on Form 399). Transformer on line 17 of quote separate Form 399 Line Item. Purchase Order for all 11 sites. </div> <div data-bbox="719 1995 1310 2029"> <b>Amount:</b> \$138,753.79 </div>

Other Electrical Service: Electrical feed disconnects and other items necessary to meet electrical code requirements	Information not provided.
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## Cost Information

### Antennas

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
<b>Primary Antenna SAA14-O4A-G300-ET5R-27</b>	<b>\$308,530.00</b>	<b>\$160,536.03</b>		<b>\$71,218.01</b>	
Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	\$12,300.00	\$11,700.00	N/A	N/A	N/A
UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	\$289,500.00	\$142,436.03	See RFS Antenna Narrative and quotes	\$71,218.01	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
<b>Auxiliary Antenna SAA22-O3-G200-ES4R-27</b>	<b>\$271,710.00</b>	<b>\$187,076.00</b>		<b>\$72,288.00</b>	

Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
UHF - Lower Power Side Mount, One station antenna -- 200-500 kW, elliptically or circularly polarized	\$227,000.00	\$144,576.00	See RFS Narrative with quotes	\$72,288.00	N/A
Elbow complex, single channel, at antenna input, per 4 1/16. feedline (if needed)	\$9,570.00	\$9,100.00	N/A	N/A	N/A
Side mount brackets for high power antennas (if not included in antenna base cost)	\$23,150.00	\$22,000.00	N/A	N/A	N/A

Pattern scatter analysis for side mount high /med power antennas (if not included in antenna base cost)	\$5,260.00	\$5,000.00	N/A	N/A	N/A
<b>Sub-total</b>	\$580,240.00	\$347,612.03	N/A	\$143,506.01	N/A
<b>Total for all systems</b>	\$2,715,115.00	\$2,543,653.30	N/A	\$1,145,805.24	N/A

## Components

Actual Information	
Description	File Name
Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	Information not provided.
UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	<p><b>Component Description:</b> 50% Primary Antenna (See Bid Page 58 Attachment A Pricing Form Item 59) included in Inv &amp; PO Line 19. Invoice &amp; Purchase Order are for all 10 sites.</p> <p><b>Amount:</b> \$71,218.01</p>
Sweep test of existing antenna	Information not provided.
Sweep test of existing antenna	Information not provided.

UHF - Lower Power Side Mount, One station antenna -- 200-500 kW, elliptically or circularly polarized	<p><b>Component Description:</b></p> <p>50% Auxilliary Antenna (See Bid Page 57 Attachment A Pricing Form Item 56) included in Inv &amp; PO Line 19. Invoice &amp; Purchase Order are for all 10 sites.</p> <p><b>Amount:</b></p> <p>\$72,288.00</p>
Elbow complex, single channel, at antenna input, per 4 1/16. feedline (if needed)	Information not provided.
Side mount brackets for high power antennas (if not included in antenna base cost)	Information not provided.
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	Information not provided.



Cost  
Information

Transmission Line

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Auxiliary Transmission Line	\$113,600.00	\$76,078.71		\$38,039.36	
Rigid Transmission Line - copper, 4 1/16"	\$113,600.00	\$76,078.71	See RFS Narrative with attached pricing	\$38,039.36	N/A
Sub-total	\$113,600.00	\$76,078.71	N/A	\$38,039.36	N/A
Total for all systems	\$2,715,115.00	\$2,543,653.30	N/A	\$1,145,805.24	N/A

Components

Actual Information Description	File Name
Rigid Transmission Line - copper, 4 1/16"	<div><div>Component Description:</div><div>50% Auxilliary Transmission Line (Bid Page 57 Attachment A Pricing Form Item 57) included in Inv &amp; PO Line 19. Invoice &amp; Purchase Order are for 10 sites.</div><div>Amount:</div><div>\$38,039.36</div></div>

Cost  
Information

Tower Equipment and Rigging Costs

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Tower TOWER	\$210,500.00	\$257,406.56		\$128,703.78	
Tall Tower (greater than 500')	\$210,500.00	\$257,406.56	See RFS Narrative with attached Pricing	\$128,703.78	N/A
Sub-total	\$210,500.00	\$257,406.56	N/A	\$128,703.78	N/A
Total for all systems	\$2,715,115.00	\$2,543,653.30	N/A	\$1,145,805.24	N/A

Components

Actual Information	
Description	File Name

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Tall Tower (greater than 500')

**Component Description:**

See Bid Page 57  
Attachment A  
Pricing Form Item  
60) for Primary  
Antenna included  
in Inv & PO Line  
20. Invoice &  
Purchase Order  
are for 10 sites.

**Amount:**

\$64,351.89

**Component Description:**

50% Primary/Tall  
Tower Installation  
(See Bid Page 58  
Attachment A  
Pricing Form Item  
58) for Auxilliary  
Antenna included  
in Inv & PO Line  
20. Invoice &  
Purchase Order  
are for 10 sites.

**Amount:**

\$64,351.89

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Cost  
Information

Outside Professional Services

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Outside Professional Services	\$93,275.00	\$179,776.00		\$105,842.24	
Tower Structural Analysis	<i>\$7,000.00</i>	\$7,000.00	N/A	\$2,500.00	N/A
Additional Legal Expenses	<i>\$24,500.00</i>	\$24,500.00	Preliminary estimate for legal expenses for non-catalog advice and review including transition status reports and other miscellaneous legal needs.	\$3,855.71	N/A
FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	\$2,105.00	\$2,000.00	N/A	N/A	N/A
ASR modification (prepare FCC Form 854)	\$2,105.00	\$2,000.00	N/A	N/A	N/A

Attorney Fees - Prepare and File request for Special Temporary Authorization	\$3,680.00	\$3,500.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	\$2,365.00	\$2,250.00	N/A	N/A	N/A
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	\$4,210.00	\$4,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	N/A	N/A
Prepare and or review reimbursement form	\$2,630.00	\$2,500.00	N/A	N/A	N/A
Address transition timing and coordination issues w/ other stations and wireless	\$2,630.00	\$2,500.00	N/A	N/A	N/A

Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$2,000.00	N/A	\$750.00	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	\$1,675.00	N/A
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	\$2,105.00	\$2,000.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A

Prepare request for Special Temporary Authorization	\$2,050.00	\$1,500.00	N/A	N/A	N/A
Project management of the transition	\$18,960.00	\$113,026.00	See attachment "WUNP Program Designer - Manager Narrative" for details on estimated cost	\$97,061.53	N/A
<b>Sub-total</b>	\$93,275.00	\$179,776.00	N/A	\$105,842.24	N/A
<b>Total for all systems</b>	\$2,715,115.00	\$2,543,653.30	N/A	\$1,145,805.24	N/A

## Components

Actual Information	
Description	File Name
Tower Structural Analysis	<div> <div>Component Description:</div> <div>           Outside Professional Services Tower Structural Analysis            See attachment page 7 for schedule of services.         </div> </div> <div> <div>Amount:</div> <div>\$2,500.00</div> </div>
Additional Legal Expenses	

**Component Description:**

Outside  
Professional  
Services  
Additional Legal  
Expenses Legal  
services benefit  
entire FCC  
Repack project  
across all 11 Call  
Signs/Facility IDs,  
315.00/11 equal  
28.63 as outlined  
on page 1 of  
invoice.

**Amount:**

\$28.63

**Component Description:**

Outside  
Professional  
Services  
Additional Legal  
Expenses Legal  
services benefit  
entire FCC  
Repack project  
across all 11 Call  
Signs/Facility IDs,  
323.00/11 equal  
29.37 as outlined  
on page 1 of  
invoice.

**Amount:**

\$29.37



<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 2059.90/11 equal 187.26 as outlined on page 1 of invoice.
<b>Amount:</b>	\$187.26

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$67.40

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 3472.00/11 equal 315.64 as outlined on page 1 of invoice.
<b>Amount:</b>	\$315.64

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$73.00

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$35.00

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 402.00/11 equal 36.54 as outlined on page 1 of invoice.
<b>Amount:</b>	\$36.54

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 959.50/11 equal 87.23 as outlined on page 1 of invoice.
<b>Amount:</b>	\$87.23

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 2594.40/11 equal 235.86 as outlined on page 1 of invoice.
<b>Amount:</b>	\$235.86

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$146.00

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$35.00

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across 10 of 11 Call Signs/Facility IDs, 3378.88/10 equal 337.89 as outlined on page 1 of invoice.
<b>Amount:</b>	\$337.89

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 67.40/11 equal 6.13 as outlined on page 1 of invoice.
<b>Amount:</b>	\$6.13

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$105.00

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 175.00/11 equal 15.91 as outlined on page 1 of invoice.
<b>Amount:</b>	\$15.91

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$70.00/11 as indicated on page 1 of Invoice
<b>Amount:</b>	\$6.36

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$885.70

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 1617.10/11 equal 147.01 as outlined on page 1 of invoice.
<b>Amount:</b>	\$147.01

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 350.00/11 equal 31.82 as outlined on page 1 of invoice.
<b>Amount:</b>	\$31.82

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$33.70

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$245.00 /11 as indicated on page 1 of Invoice
<b>Amount:</b>	\$22.27

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$35.00

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$70.00

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$539.20

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 572.90/11 equal 52.08 as outlined on page 1 of invoice.
<b>Amount:</b>	\$52.08

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 368.00/11 equal 33.45 as outlined on page 1 of invoice.
<b>Amount:</b>	\$33.45

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$70.00



<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 765.00/11 equal 69.54 as outlined on page 1 of invoice.
<b>Amount:</b>	\$69.54

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses
<b>Amount:</b>	\$67.40

<b>Component Description:</b>	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 168.50/11 equal 15.32 as outlined on page 1 of invoice.
<b>Amount:</b>	\$15.32

	<p><b>Component Description:</b></p> <p>Outside Professional Services Additional Legal Expenses</p> <p><b>Amount:</b></p> <p>\$35.00</p>
FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	Information not provided.
ASR modification (prepare FCC Form 854)	Information not provided.
Attorney Fees - Prepare and File request for Special Temporary Authorization	Information not provided.
Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	Information not provided.
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	Information not provided.
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	Information not provided.
Prepare and or review reimbursement form	Information not provided.
Address transition timing and coordination issues w/ other stations and wireless	Information not provided.

Perform engineering study for new channel assignment and antenna development	<p><b>Component Description:</b></p> <p>Outside Professional Services Engineering Study New Channel Assignment Antenna Development</p> <p><b>Amount:</b></p> <p>\$750.00</p>
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	<p><b>Component Description:</b></p> <p>Outside Professional Services Engineering Section FCC Form 2100 Construction Permit Application Main/Primary</p> <p><b>Amount:</b></p> <p>\$1,675.00</p>
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	Information not provided.
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Information not provided.
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	Information not provided.
Prepare request for Special Temporary Authorization	Information not provided.
Project management of the transition	

<b>Component Description:</b>	Outside Professional Services Project Management of Transition See attachment pg 3-6 for Contract /Invoice Summary. PO/Contract for all eleven transmitter sites.
<b>Amount:</b>	\$10,283.66

<b>Component Description:</b>	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract /Invoice Summary.
<b>Amount:</b>	\$5,141.83

<b>Component Description:</b>	Outside Professional Services Project Management See attachment pg. 3 & 4 for Project Summary
<b>Amount:</b>	\$9,022.50

<b>Component Description:</b>	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract /Invoice Summary
<b>Amount:</b>	\$4,352.64

<b>Component Description:</b>	Outside Professional Services Project Management
<b>Amount:</b>	\$9,022.50

<b>Component Description:</b>	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract /Invoice Summary
<b>Amount:</b>	\$49,675.80

<b>Component Description:</b>	Outside Professional Services Project Management See attachment pg. 3 & 4 for Project Summary
<b>Amount:</b>	\$6,703.50

<b>Component Description:</b>	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract /Invoice Summary
<b>Amount:</b>	\$11,881.60

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## Cost Information

### Other Expenses

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
<b>Other Expenses</b>	<b>\$86,780.00</b>	<b>\$81,230.00</b>		<b>\$37,411.35</b>	
MVPD Notification of Channel Change	<i>\$5,500.00</i>	\$5,500.00	Preliminary estimate of service	N/A	N/A
Develop and air announcement of upcoming channel change	<i>\$2,000.00</i>	\$2,000.00	Preliminary estimate	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	<i>\$67,730.00</i>	\$67,730.00	Quotes for disposal of both transmitters are attached	\$33,661.35	N/A
DTV Medical Facility Notification	\$11,550.00	\$6,000.00	Preliminary estimate of service	\$3,750.00	N/A
<b>Sub-total</b>	<b>\$86,780.00</b>	<b>\$81,230.00</b>	<b>N/A</b>	<b>\$37,411.35</b>	<b>N/A</b>
<b>Total for all systems</b>	<b>\$2,715,115.00</b>	<b>\$2,543,653.30</b>	<b>N/A</b>	<b>\$1,145,805.24</b>	<b>N/A</b>

### Components

Actual Information	
Description	File Name
MVPD Notification of Channel Change	Information not provided.

Develop and air announcement of upcoming channel change	Information not provided.	
Disposal Costs (for equipment and other waste, net of any salvage value)	<b>Component Description:</b>  <b>Amount:</b>	50% Aux Transmitter Disposal. Purchase Order is for all 11 sites. \$13,782.60  50% Primary Transmitter Disposal. Purchase Order is for all 11 sites. \$19,878.75
DTV Medical Facility Notification	<b>Component Description:</b>  <b>Amount:</b>	Other Expenses DTV Med Notify \$3,750.00

**Cost  
Information**

**Grand Total**

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	\$2,715,115.00	\$2,543,653.30	\$1,145,805.24

**Reimbursement Status**

Question	Response
The facility has ceased operating on its pre-auction channel.	No
Construction of final facilities or all necessary modifications are complete.	No
All receipts for reimbursement have been submitted no further costs are expected to be incurred. Note this will lock the Form 399 from further editing and begin close-out procedures with the Fund Administrator.	No



Certification	Section	Question	Response
	Submission of Estimated Expenses Statements	<p>WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT.</p>	
		<ol style="list-style-type: none"> <li>1. The Authorized Person signing below certifies that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity.</li> <li>2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.</li> <li>3. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.</li> </ol>	

4. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (broadcasters) or to continue to carry the signal of a broadcaster that changes channels (MVPD).
5. The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
6. The above-named entity certifies that it will maintain and provide to the Commission detailed records, including receipts, of all costs eligible for reimbursement actually incurred.
7. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.

<p>8. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a pre-requisite for obtaining the payments herein requested.</p>	
<p>I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.</p>	<p><b>Donald Smith</b>  <i>Director of New Technologies Compliance &amp; Planning</i></p> <p>07/24/2019</p>

Certification	Section	Question	Response
	Submission of Actual Cost Documentation Statements	<p>WILLFUL FALSE, FRAUDULENT, OR FICTITIOUS STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE AND/OR FRAUDULENT STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT (U.S. CODE, TITLE 31, SECTIONS 3729-3733).</p>	
		<ol style="list-style-type: none"> <li>1. The Authorized Person signing below certifies and represents that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity.</li> <li>2. The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct.</li> <li>3. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.</li> </ol>	

4. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.
5. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (full power and Class A stations) and/or otherwise modify a television station's facility as a result of the spectrum repack (LPTV/TV Translator stations); or to minimize service disruption resulting from a repacked television station (FM stations); or to continue to carry the signal of a broadcaster that changes channels (MVPD) .
6. The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
7. The above-named entity certifies that the cost information /documents submitted reflect costs actually incurred.

<p>8. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.</p> <p>9. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a prerequisite for obtaining the payments herein requested.</p>	
<p>I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.</p>	<p><b>Robert Levin</b>  <i>Director of Finance and Administration</i></p> <p>07/24/2019</p>

## Attachments