

### **Exhibit C-5 List of INTEC Infrastructure Upgrades Projects**

#### **INTEC Utility Control System**

The current INTEC programmable logic controller (PLC) -based Utility Control System shall be replaced with a secure Ethernet-based control system. The system shall consist of the newest generation of General Electric (GE) PLCs and shall include all necessary computer hardware and software, gigabit switches, power supplies, trip units, and other components. The scope includes specifying, designing, procuring, installing and testing the new utility control system.

The following table shows the configuration of the current system hardware on the left, and a previously proposed upgrade on the right. This is provided for information only.

Item	Quantity	Catalog #	Description	Replace	Quantity	Catalog #	Description
1	17	IC697PWR711	PWR SUPPLY 120/240 VAC 100W	Yes	17	IC698P9A100	RX7I Power Supply 100Watt 85-264VAC
2	5	IC697PCM711	PROGRAMMABLE COPROCESSOR MOD	No			
3	2	IC697MEM713	MEMORY 256KB CMOS EXPAN(385)	Yes	0		Memory Included with new RX7I Processor
4	3	IC697CPX935	935 CPX 1 MB MEM FLOAT	Yes	3	IC698CPED10	RX7I 300mhz CPU with Ethernet 10/100
5	2	IC697CPU782	782 CPU EXPAN MEM FLOAT (386)	Yes	2	IC698CPED10	RX7I 300mhz CPU with Ethernet 10/100
6	2	IC697CPM925	925 CPM 1 MB MEM FLOAT	Yes	2	IC698CPED10	RX7I 300mhz CPU with Ethernet 10/100
7	8	IC697CPM915	915 CPU 1 MB MEM FLOAT 486DX	Yes	8	IC698CPED10	RX7I 300mhz CPU with Ethernet 10/100
8	2	IC697CPM914	914 CPU 512 KB MEM FLOAT 486DX	Yes	2	IC698CPED10	RX7I 300mhz CPU with Ethernet 10/100
9	63	IC697BEM731	90-70 GENIUS BUS CONTROLLER	Yes/No	63		Depends on the firmware version the Bus Controller
10	2	IC693PWR322	PWR SUPPLY 2448VDC STD	Yes	2	IC695P9A140	120/240VAC, 125VDC Multipurpose Power Supply is suitable for use in load-sharing and redundancy application. It must be installed in a PACSystems RX3I (IC695-catalog number) Universal Backplane. It can be used as the only power supply in the backplane
11	3	IC693PCM301	PROGRAMMABLE COPROCESSOR 192K	Yes	3		Function of Programmable Coprocessor must be review for replacement.
12	2	IC693MDL740	OUTPUT 1224VDC 0.5A 18PT/SLOT	No			
13	3	IC693MDL646	INPUT 24VDC 16PT POS/NEG FAST	No			
14	2	IC693CPU352	SERIES 90-30 CPU, MODEL 352	Yes	2	IC698CPU310	300Mhz CPU with 10Meb of memory 2 SERIAL PORTS (occupies two slots on system base)
15	2	IC693CMM321	ETHERNET INTERFACE	Yes	2	IC695ETIM001	Ethernet module 10/100 While 2 RJ45 connections one IP address occupies one slot on system base
16	155	IC660BPM100	PWR TRAC 115-230VAC/125VDC	No			
17	137	IC660BBS103	I/O BLK W/O F/S ADD/DC 8 CKT ISOL	No			
18	7	IC660BBS101	I/O BLK W/O F/S ADD/DC 8 CKT ISOL	No			
19	5	IC660BBS100	I/O BLK 115VAC/125VDC 8CKT	No			
20	20	IC660BBD110	INPUT BLK 115VAC 18CKT	No			
21	10	IC660BBD025	I/O BLK 5/12/24VDC 32CKT SNK	No			
22	4	IC660BBD022	I/O BLK 24VDC 16CKT SRC	No			
23	23	IC660BBD020	I/O BLK 2448VDC 16CKT SRC	No			
24	11	IC660BBA100	ANALOG 115VAC 4I/2O	No			
25	32	3RD PTY VME	PHOENIX OPTICAL COMM MODULE	No			
26	11	3RD PTY VME	DATUM BC637GPS MODULE	No			
27	77	IC697CHS791	9070 Rack	Yes		IC698CHS117	RX7I 17Slot Rack Front Mount
	77	IC693CHS391	9090 CPU Rack	Yes	1	IC695CHS012	RX3I 12 slot universal base
				Yes		IC695HHMS01	Genius Hand Held Monitor
				Yes			Logic Developer PLC Professional with Programming Cable without Proficy GlobalCare Complete with USB Hardware key

Equipment Sub-total

## **INTEC Emergency Communication System**

The INTEC Emergency Communication System (ECS) shall be replaced with a new wireless communication system. The ECS includes alarms and voice paging using speakers, visual indications using strobes, and interfaces with the fire alarm system. This scope includes installing a wireless base station(s) with 4 hour battery backup and a computer with system management software; and installing a wireless remote in each building listed below, including 4 hour battery backup, fire alarm interfaces, antennas, speakers, and strobes.

The scope includes:

- Designing a new wireless system in accordance with current code requirements.
- Project and construction management.
- Installation of new wireless communication equipment, new speakers, strobes, and conduit.
- Installation of conduit/wire between wireless field units and new speakers/strobes in buildings.
- Connection of new speakers/strobes to new wireless units using existing conduits/wires.
- Installation of power wiring to new field units from electrical distribution panels.
- Programming of communication equipment.
- S.O. Testing
- Factory oversight and commissioning of new equipment.

The following INTEC Buildings/Structures are included:

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## INTEC Power Distribution System Upgrades

### MOD 150 – 10/23/19

~~The Contractor shall replace aging electrical distribution equipment at INTEC. The scope of work includes the following:~~

- ~~1) Perform arc flash labeling, and purchase electrical power metering equipment.~~
- ~~2) Install AC PRO breaker control units for Load Centers 1, 3, 4, PCC-FPG-681, PCC-FPE-669, PCC-PFG-680, and PCC-YDH-971.~~
- ~~3) Replace failing/obsolete/non-supported Substation Breaker relay control units with units that match Integrated Waste Treatment Unit (IWTU) relay control equipment for Substations 10, 15, 20, and 60, and Power Control Center (PCC)-85.~~
- ~~4) Develop PM work orders for approximately 947 pieces of electrical distribution equipment designated as Hazard Category 0 in approximately 175 INTEC facilities.~~
- ~~5) Procure test equipment for PM inside INTEC facilities including power quality meter and infrared cameras.~~
- ~~6) Implement changes to National Fire Protection Association (NFPA) 70, “National Electrical Code,” and 70E, “Standard for Electrical Safety in the Workplace,” requirements.~~
- ~~7) Replace approximately 30 sectionalizing switch input/output (I/O) batteries.~~
- ~~8) Procure spare circuit breakers for Substation 15 and PCC-85.~~
- ~~9) Replace Power Sectionalizing Switch PSS-FPG-120.~~
- ~~1) Increase the power capacity and double-end feed to Building CPP-663.~~

The Contractor shall replace aging electrical distribution equipment at INTEC. The scope of work includes the following:

- 1) Perform arc-flash labeling to NFPA 70 2017 and NFPA 70E 2018. Label installation shall be performed under the 851 effort.
- 2) Develop Preventive Maintenance Justification (PMJ) forms and Preventive Maintenance (PM) work orders for electrical distribution transformers. PMJs and PMs for all other electrical distribution equipment shall be performed under the 851 effort.
- 3) Procure test equipment for PM’S inside INTEC facilities including power quality meter, infrared camera and purchase electrical power metering equipment.
- 4) Procure spare circuit breakers for Substation 15 and PCC-85 in accordance with NFPA 70 2017 and NFPA 70E 2018.
- 5) Remove and bypass Power Sectionalizing Switch PSS-FPG-120 in accordance with NFPA 70 2017 and NFPA 70E 2018.
- 6) Increase the power capacity and double-end feed to building CPP-663 in accordance with NFPA 70 2017 and NFPA 70E 2018.