RFP NO. 14-04

AMI Electric Meter Deployment for Norwich Public Utilities Electric System

NORWICH PUBLIC UTILITIES

Norwich Public Utilities (NPU) is soliciting a Request for Proposals (RFP) for deployment of approximately 11,500 Tantalus radio system equipped Itron and General Electric meters and removing and replacing residential, commercial and industrial revenue meters with AMI meters. It is the intent of the City to award based on experience, deployment strategy, safety record and qualifications with AMI projects of this magnitude and cost.

Proposals shall include, but are not limited to, the following:

- Deployment strategy that outlines the approach, methodology and resource requirements
- Implementation plan that coincides with deployment strategy and meets equipment availability and schedule provided by NPU
- Performance metrics in accordance with mutually agreed upon plan
- Exception process and data collection requirements
- Detailed reports on exceptions, data collection, status and metrics
- Cost per meter for initial installation and revisits. Revisits include, but are not limited to, no access, equipment failures and other installation or quality issues
- Schedule for completion by **December 1, 2014** taking into consideration lead time on equipment availability (delivery schedule) and availability of labor (Days of week Monday – Friday between the hours of 8:00 a.m. and 4:30 p.m.)
- References and contacts for projects of similar size and scope that were successfully completed

Proposals are due on Tuesday July 1, 2014 at 2:00 p.m. and shall be submitted to Mr. William Block, Purchasing Agent, 100 Broadway, Norwich, CT 06360 (Norwich City Hall). Proposals will be opened in Room 319, Norwich City Hall, at that time.

Technical questions should be directed to Mr. Mark Greene, Electric System Integrity Manager, Norwich Public Utilities, 16 South Golden Street, Norwich, CT. 06360 or 860.823.4119.

William Block
City Purchasing Agent

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Purpose

Norwich Public Utilities (NPU) provides four utilities to the City of Norwich – natural gas, electric, water and wastewater. Established in 1904, NPU is municipally-owned and governed by a five-member Board of Commissions and Sewer Authority.

NPU is soliciting a Request for Proposals (RFP) for the removal and replacement of residential, commercial and industrial revenue meters with approximately 11,500 Tantalus radio system equipped Itron and General Electric AMI meters. NPU has approximately 22,000 electric meters on its system.

Project Scope

The work consists of but is not limited to the following:

1. Removing and replacing approximately 11,500 meters provided by NPU. A map depicting electric meters is provided as Attachment 2. NPU reserves the right to adjust quantities. Actual number of meters to be deployed will be based on cost of service versus budget.
2. Customer Notifications as described below.
3. Installing RT-3205 meter socket based Tantalus collectors on a ratio of one (1) collector per seventy-five (75) meters based on Tantalus collector location plan. Collectors and their locations will be provided by NPU.
4. Strategy and plan for meter deployment by location
5. Data Collection, Recording and Quality Assurance as described below
6. Contractor-defined Performance Metrics
7. Status Reporting
8. Installation Warranty
9. Deployment based on delivery schedule of approximately 3,000 meters per month, starting in mid-July 2014 through October 2014 and must be completed by **December 1, 2014**.
10. This is a one year contract. NPU reserves the right to expand its deployment efforts and extend this contract for two (2) additional one (1) year terms

Deployment

- Deployment strategy based on map and meter info.
- Meters shall not be replaced within 5 days of meter read date. Meter read dates will be provided by NPU.
- Provide notification letter to each customer at least two weeks prior to meter install date. Letter shall include, but is not limited to, name of contractor, working on behalf of NPU, purpose of work, area affected and time period of visit. Wording of letter will be approved by NPU.
- Provide each customer with a door hanger informing them of work completion or need for a Revisit with reason and contact info for scheduling the Revisit. Wording of door hanger will be approved by NPU.
- Provide 24/7 call center to answer customer calls.

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Data Collection, Recording and Quality Assurance

Each related observation made at the meter installation site will be carefully documented and delivered electronically at the end of each business day in the format provided by NPU. The file format shall be in Microsoft Excel 2010. Example of file format is provided as Attachment 1. Contractor provided data is highlighted in Attachment 1. A photo file (e.g., *.JPG) of the physical meter face of the replaced and new meter will be required. Naming of each photo shall include customer address and meter number.

General Requirements

- NPU will provide all meters, seals, adapters and collectors
- Selected contractor, without additional expense to the City, shall be responsible for obtaining necessary licenses and for complying with any applicable federal, state and municipal laws, codes and regulations in connection with the prosecution of the services
- Selected contractor will provide tools and personal protection equipment necessary to successfully and safely switch out energized meters
- All work must be performed in accordance with NPU safety guidelines. These guidelines are included as Attachment 3

Proposals shall include:

- Contractor name, address, phone numbers and the names of principals
- Contractor's web site address, if applicable
- Year established
- Relevant experience of the Contractor with projects of similar type, size and scope
- Proposed project team, with lines of accountability, and relevant licenses and experience
- Proposed Sub-Contractor, if any, including all relevant information similar to that required of Contractor
- Client References and contacts for projects of similar size and scope that were successfully completed over the last 5 years
- List any and all claims arising out of any work performed by the Contractor and any proposed Sub-Contractor during the last 5 years
- Points of contact for this project, including e-mail addresses and phone number, if applicable
- Contractor warrantee for labor and installation of the equipment related to this contract
- Deployment strategy that outlines the approach, methodology and resource requirements
- Implementation plan that coincides with deployment strategy and meets equipment availability and schedule provided by NPU. Schedule for completion by **December 1, 2014** taking into consideration lead time on equipment, availability (delivery schedule) and availability of labor (Days of week Monday – Friday between the hours of 8:00 a.m. and 4:30 p.m.)
- Performance metrics in accordance with mutually agreed upon plan

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- Exception process in case of inability to remove or install meter including data collection and escalation.
- Detailed reports on exceptions, data collection, status and metrics
- Cost per meter for initial installation and revisits shall be provided in the format below. Numbers are provided for estimating purposes only and may be adjusted at NPU's discretion. NPU may award all or some of the lines items below. Revisits include, but are not limited to, no access, equipment failures and other installation or quality issues:

Install 2S residential single- phase meter (Qty.: approx. 11,000)	$_____/per each
Install 2S socket-based collector (Qty.: approx. 150)	$_____/per each
Install 12S commercial poly-phase meter (Qty.: approx. 500)	$_____/per each
Install other commercial/industrial poly-phase meter (3S, 9S, 16S, 45S, etc) (Qty.: approx. 400)	$_____/per each
Revisit Install Site: includes notification of customer	$_____/per each
Initial visit without install (e.g., equipment failure)	$_____/per each
Installation of meter not readily accessible: requires prior contact	$_____/per each
Install S-based adapter on A-based meter (Qty.: approx. 500)	$_____/per each

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Additional Requirements

The successful contractor must file with the Owner, Workmen's Compensation, Comprehensive General Liability, Comprehensive Auto Liability, Certificates of Insurance satisfactory to the Owner, in compliance with the law, and in the following form and amount:

Liability Insurance shall include all major divisions of coverage and be on a comprehensive basis including:

1. Broad Form Comprehensive General Liability: $1,000,000 combined single limit per occurrence for bodily injury, personal injury, property damage, and products / completed operations. $2,000,000 Aggregate
2. Comprehensive Automobile Liability (owned, non-owned, hired):- $1,000,000 combined single limit per occurrence for bodily injury and property damage
3. Workers' Compensation - Limits as required by State of Connecticut Labor Code
4. Employers' Liability: $100,000 each accident; $500,000 disease/policy limit; $100,000 disease/each employee
5. Professional Liability (if used on a claims-made basis, insurance coverage shall be maintained for the duration of the contract and for two (2) years following contract completion): $1,000,000 per occurrence; $1,000,000 aggregate
   Personal Property Coverage - Adequate insurance to cover the value of personal property (including but not limited to, personal computer and automobiles) belonging to the Contractor while located on City of Norwich property, while in use or in storage, for the duration of the contract.

The City of Norwich (Owner) and Norwich Public Utilities shall be named as additional insured on the above coverage's.

Indemnity of NPU by Contractor

The Contractor shall indemnify and save harmless the Owner against any and all damages to property or injuries to or death of any person or persons, including property and employees or agents of the Owner, and shall defend, indemnify and save harmless the Owner from any and all claims, demands, suits, actions or proceedings of any kind or nature including workmen's compensation claims, of or by anyone whomsoever, in any way resulting from or arising out of the operations in connection herewith, including operations of subcontractors and acts or omissions of employees or agents of Contractor or his subcontractors. Insurance coverage specified herein and in any special conditions constitutes the minimum requirements and said requirements shall in no way lessen or limit the liability of Contractor under the terms of the contract. The Contractor shall procure and maintain, at his own cost and expense, any additional kinds and amounts of insurance which, in his own judgment, may be necessary for his proper protection in the prosecution of the work. The Contractor agrees to well and truly save and indemnify and keep harmless, the Owner against all liability, judgments, costs and expenses

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which may in any wise come against the Owner or which may in any way result from carelessness, omission or neglect of the Contractor or his agents, employees or workmen in any way arising or resulting from the operation in connection herewith, including all liability to the Owner resulting from the failure to erect or maintain sufficient railing or fence as required by Section 13a111, Connecticut General Statutes, and against all liability from defects claimed to be in violation of Section 13a-149, Connecticut General Statutes.

Proposals are due on Tuesday July 1, 2014 at 2:00 p.m. and shall be submitted to Mr. William Block, Purchasing Agent, 100 Broadway, Norwich, CT 06360 (Norwich City Hall). Proposals will be opened in Room 319, Norwich City Hall, at that time.

Technical questions should be directed to Mr. Mark Greene, Electric System Integrity Manager, Norwich Public Utilities, 16 South Golden Street, Norwich, CT. 06360 or 860.823.4119.

ATTACHMENT 1

Meter Install Report (Example)

ATTACHMENT 1
Norwich Public Utilities
Meter Install Report (Example)

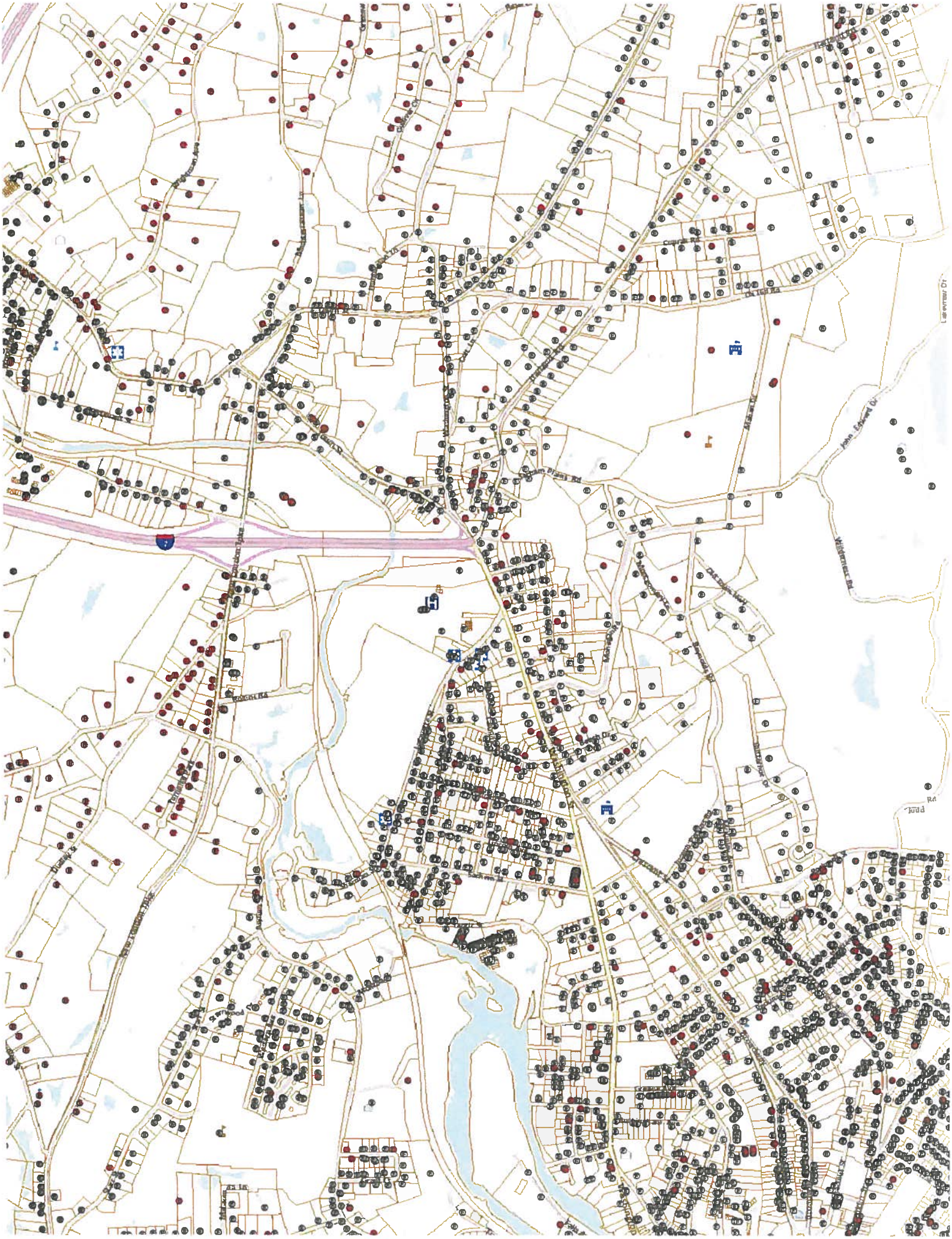
Rte	Location	Connection Sequence	Customer #	Rate	Customer Name	GIS Identifier	No	SRV Street	APT	APT No	Status	Multiplier	Serial	Class	Make	Remote Id	Previous Reading	Old Meter No	Old Meter Reading	New Meter No	Install Date	Initial Reading	Serial No	New Remote Id	Old Meter Faceplate Photo (JPEG)	New Meter Faceplate Photo (JPEG)	Install Status	X_Coord	Y_Coord
1	501069	3	100270	ECOMEC	ABC Cable	501069-00001	15	A Street			Active	1	53565489	EAI21025320 TD	GE I210 / TANTALUS	001066C4BA	89193	E214654											1174666.2501	765428.8494
2	501258	2	152486	ERES	John Doe	501258-00001	96	B Street	APT	2	Active	1	50841698	EAI210+25RD	GE I210+ RD/TANTALUS	000F688851	0	E213705										1184276.0764	754246.4994
2	501259	2	152486	ERES	John Doe	501259-00001	96	C Street	APT	3	Active	1	50841699	EAI210+25RD	GE I210+ RD/TANTALUS	000F68277E	3	E213706										1184276.3684	754243.8734
2	501257	2	152486	ERES	John Doe	501257-00002	96	D Street	APT	1	Active	1	50841610	EAI210+25RD	GE I210+ RD/TANTALUS	000F6D6DAD	346	E213617										1184276.6016	754240.7221
2	501256	8	152486	ERES	John Doe	501256-00001	96	E Street	HSE	MTR	Active	1	50841305	EAI210+25RD	GE I210+ RD/TANTALUS	000F4DEC78	1628	E213312										1184276.6600	754238.4462
2	501260	2	152486	ERES	John Doe	501260-00001	96	F Street	APT	4	Active	1	50841612	EAI210+25RD	GE I210+ RD/TANTALUS	000F6D7EC1	3934	E213619										1184276.6600	754236.3455
3	501624	4	165854	ERES	Peak LLC	501624-00001	270	G Street			Active	1	53565584	EAI21025320	GE I210 / TANTALUS	001038A110	29248	E214749										1183047.8685	756143.6635
3	501610	5	102093	ERES	Joe Smith	501610-00001	253	H Street			Active	1	50511139	EAI210+25RD	GE I210+ RD/TANTALUS	000F20DE13	15464	E211302										1183494.3486	755939.6672
3	525479	1	159477	ERES	Jim Doe	525479-00001	67	I Street	UNIT	30	Active	1	50840915	EAI210+25RD	GE I210+ RD/TANTALUS	000F6E9CS8	520	E212922										1190114.7140	752682.1839
3	525480	1	160094	ERES	Jane Doe	525480-00001	67	J Street	UNIT	31	Active	1	50840916	EAI210+25RD	GE I210+ RD/TANTALUS	000F6EA7C7	2982	E212923										1190114.8590	752683.7791
3	525463	1	165512	ERES	Tom Smith	525463-00001	67	K Street	UNIT	14	Active	1	50840991	EAI210+25RD	GE I210+ RD/TANTALUS	000F6EA9A3	2825	E212998										1190353.5294	752584.8075
3	525462	1	152228	ERES	Lulu Lily	525462-00001	67	L Street	UNIT	13	Active	1	50841256	EAI210+25RD	GE I210+ RD/TANTALUS	000F572A23	5933	E213263										1190353.6394	752586.7865
4	528339	1	123674	ECOMESC	ABC Phone	528339-00001	101	M Street	FA#	10071189	Active	1	50783285	EAI210+N12SRD	GE I210+N RD/TANTALUS	00131E521E	64290	E213992										1183968.2154	752210.4286
4	501672	4	102320	ERES	Tim Cruise	501672-00001	100	N Street	APT	1	Active	1	50783334	EAI210+N12SRD	GE I210+N RD/TANTALUS	001316316E	0	E214041										1184109.4616	752512.5717
4	501670	8	102320	ERES	Main LLC	501670-00001	100	O Street	APT	3	Active	1	50783335	EAI210+N12SRD	GE I210+N RD/TANTALUS	001314E889	0	E214042										1184112.3533	752526.4513
5	501968	4	161720	ECOMESC	Brand X	501968-00001	50	P Street	HSE	MTR	Active	1	50783333	EAI210+N12SRD	GE I210+N RD/TANTALUS	001314B4F9	937	E214040										1184578.6821	752821.7817
5	501965	7	165705	ERES	Frank lee	501965-00003	50	Q Street	FL	1	Active	1	50783266	EAI210+N12SRD	GE I210+N RD/TANTALUS	001319B1B6	740	E213973										1184578.9012	752819.7712
5	501979	11	161720	ERES	Heidi High	501979-00002	50	R Street	APT	4	Active	1	50783268	EAI210+N12SRD	GE I210+N RD/TANTALUS	001319SAFC	141	E213975										1184581.4163	752822.0301
5	501966	5	161720	ERES	Build It LLC	501966-00001	50	S Street	APT	2	Active	1	50509828	EAI210+N12SRD	GE I210+N RD/TANTALUS	000D327831	7914	E211791										1184581.4980	752820.0544
5	501967	8	161720	ERES	Build It LLC	501967-00001	50	T Street	APT	3	Active	1	50783265	EAI210+N12SRD	GE I210+N RD/TANTALUS	00131505DB	54	E213972										1184583.9534	752820.0708
5	524608	7	165536	ERES	Emma Watson	524608-00001	50	U Street	APT	5	Active	1	50783267	EAI210+N12SRD	GE I210+N RD/TANTALUS	00131960CC	243	E213974										1184584.0118	752822.1400
5	528139	3	135052	ECOMESC	XYZ LLC	528139-00001	54	V Street	HSE	MTR	Active	1	50783336	EAI210+N12SRD	GE I210+N RD/TANTALUS	13171851	607	E214043										1184584.5892	752855.6911
6	502069	6	162113	ERES	Tiara Crowne	502069-00001	12	W Street	APT	2	Active	1	50509989	EAI210+25RD	GE I210+ RD/TANTALUS	000F067245	57229	E210152										1186762.1154	752079.7068
6	502124	6	162739	ECOMESC	King Fisher	502124-00001	418	X Street			Active	1	50841230	EAI210+25RD	GE I210+ RD/TANTALUS	000F6E0B56	1849	E213237										1186839.8544	752250.5529
6	528687	1	155901	ERES	Heidi Long	528687-00001	28	Y Street			Active	1	50841316	EAI210+25RD	GE I210+ RD/TANTALUS	000F55FD78	956	E213323										1187082.5547	751917.4811
6	502142	5	103092	ERES	Joan Smith	502142-00002	111	Z Street			Active	1	50841685	EAI210+25RD	GE I210+ RD/TANTALUS	000F635481	19347	E213692										1188907.8076	752901.5477
8	527804	1	157244	ERES	Amy White	527804-00001	41	A1 Street	UNIT	28	Active	1	50510713	EAI210+25RD	GE I210+ RD/TANTALUS	000F39D351	22334	E210876										1188829.7497	752305.4301
8	525971	1	158320	ERES	Luke Wilson	525971-00001	41	A2 Street	UNIT	29	Active	1	50510425	EAI210+25RD	GE I210+ RD/TANTALUS	000F318753	13025	E210588										1188830.1221	752304.1181
8	525972	1	158269	ERES	Shawn Penn	525972-00001	41	A3 Street	UNIT	30	Active	1	505100426	EAI210+25RD	GE I210+ RD/TANTALUS	000F3157FD	26328	E210589										1188830.4305	752302.5315
8	502475	3	164738	ERES	Sara Lee	502475-00001	629	A4 Street			Active	1	50840837	EAI210+25RD	GE I210+ RD/TANTALUS	000F54B2DF	22277	E212844										1189177.4147	751170.1702
9	502626	2	135799	ERES	Tom Hanks	502626-00001	337	A5 Street	FL	2	Active	1	50510696	EAI210+25RD	GE I210+ RD/TANTALUS	000F320966	1960	E210859										1189345.7696	748534.4009
9	502606	2	144482	ERES	French Riviara	502606-00001	227	A6 Street			Active	1	50841637	EAI210+25RD	GE I210+ RD/TANTALUS	000F656061	56451	E213644										1189770.1044	750106.6241
9	502639	3	104040	ERES	Jim Black	502639-00001	3	A7 Street			Active	1	50510695	EAI210+25RD	GE I210+ RD/TANTALUS	000F3B92F5	15751	E210858										1189851.5091	750168.6670
9	502635	3	104036	ERES	Ruby Red	502635-00002	284	A8 Street			Active	1	50841780	EAI210+25RD	GE I210+ RD/TANTALUS	000F62B25D	6312	E213787										1190291.0210	749717.4753
9	502649	4	160580	ERES	Hank Wilson	502649-00001	141	A9 Street	FL	1	Active	1	50840901	EAI210+25RD	GE I210+ RD/TANTALUS	000F687623	10833	E212908										1190494.3143	750231.2702
9	502648	3	160085	ERES	Chris Lee	502648-00001	141	B2 Street	FL	2	Active	1	50840919	EAI210+25RD	GE I210+ RD/TANTALUS	000F6E3DB1	7573	E212926										1190496.6899	750238.9250

Contractor provided data highligthed in yellow.

ATTACHMENT 2

NPU Electric Meter Map

Norwich Public Utilities
AMI Electric Meter Deployment



ATTACHMENT 3

NPU Safety Guidelines

NORWICH PUBLIC UTILITIES
SAFETY GUIDELINES

CONTRACTOR REQUIREMENTS

1.0 Contractor Responsibilities

Introduction:

The following are the Norwich Public Utilities contractor safety requirements. You, the Contractor are to read this material carefully and be prepared to sign and date the back page indicating that you will comply with these requirements. Please feel free to contact Klaus F. Broscheit, Norwich Public Utilities Safety Officer (508) 776-9713 with any questions.

Prior to Operation:

1.1 General safety operating requirements will be discussed at the Contractor's Orientation Meeting, prior to the start of the job.

1.2 The contractor must advise the Norwich Public Utilities Project Manager of hazards associated with their proposed work operation (chemicals, gases, dusts, radiation). Contractors will not be permitted to bring hazardous chemicals or materials onto Norwich Public Utilities property without first providing the Material Safety Data Sheet, in advance, to the General Manager of Operations for approval by the Norwich Public Utilities Safety Officer. (See Guide 1 and 2 for additional Hazcom and Chemical Handling information and requirements).

2.0 Supervision of Employees

2.1 All contractors who conduct work at any Norwich Public Utilities facility will be responsible for complying with all applicable Federal, State, Local, OSHA and Norwich Public Utilities Environment, Health and Safety regulations. The contractor is responsible for notifying his/her personnel of specific hazards, emergency procedures, safe work practice, and safety rules which must be followed while on the job site.

2.2 The contractor is responsible for supervision of his/her work force and any subcontractors with regard to all aspects of the project. He/She agrees that all procedures discussed during the orientation are understood by the workers and will be followed.

2.3 The contractor will be responsible for providing his/her employees with medical care and first aid treatment.

2.4 Loose or hanging clothing, jewelry and long hair are prohibited near moving machines or parts.

2.5 Smoking is not permitted at any Norwich Public Utilities facility. Fire prevention and control is critical at any Norwich Public Utilities facility. Please review Guide 3 "Fire Protection and Prevention" for additional requirements.

3.0 Safety Equipment

3.1 The contractor is responsible for compliance with Norwich Public Utilities and OSHA regulations with regard to furnishing their employees with all necessary personal protective equipment and all tools and equipment needed to perform service at a Norwich Public Utilities facility. Norwich Public Utilities PPE; tools and equipment shall not be allowed to be used by contract personnel unless authorized in advance by NPU.

3.2 Hard hats must be worn in all areas where work is being performed.

3.3 Eye protection shall be worn when performing a task which may endanger sight, and in all designated areas where safety glasses are required. (See Guide 4 "Personal Protective Equipment" for additional PPE information and requirements).

3.4 Hearing protection shall be worn as required. (See Guide 5 "Hearing Conservation" for additional information and requirements).

4.0 Work Area

4.1 The contractor is not permitted to manipulate any switch controls, valves or instruments without advance approval. The contractor will request permission, in advance, before commencement of any work on piping, electrical distribution systems, or utility systems.

4.2 Equipment lock-out mechanisms (locks and tags) shall be used in accordance with OSHA standards Lockout/Tagout Procedures.

A. Contractors will comply with OSHA 29 CFR 1910.269(d) or 29 CFR 1910.147 standards,"The Control of Hazardous Energy", and shall not

begin work until procedures are coordinated with Norwich Public Utilities representatives.

B. Norwich Public Utilities locks and/or tags may be added (in addition) to outside contractor locks, and shall not be removed until a Norwich Public Utilities representative determines that it is safe to re-engage the energy source.

4.3 Practice good housekeeping at all times. Do not leave materials or equipment blocking aisles, walkways, stairs or other paths of egress.

4.4 Defective tools or equipment shall not be used. All tools and extension cords shall meet or exceed applicable standards.

4.5 Equipment requiring guards and safety devices shall be in good operating condition and shall have all guards in place and all safety devices working properly.

4.6 All ladders shall be ANSI approved and used in accordance with OSHA standards. All ladders shall be inspected each time before use.

4.7 Machinery and equipment shall not be started before a thorough check of the work area has been made by the project manager to assure that people are clear of any moving parts or operations, and all affected employees have been notified.

4.8 No person shall activate or operate powered industrial equipment without proper authorization.

4.9 No confined space will be entered by contractor personnel unless they follow recognized safe confined space entry procedures such as in U.S. NIOSH guidelines, ANSI Standard or other comparable State, Local, or Federal regulations. A confined space is defined as a vessel, tank, pipeline, pit or enclosed space where dangerous air contamination or lack of oxygen may be present due to a manufacturing process or work procedure, or where an egress path may be limited.

A. The Norwich Public Utilities Safety Consultant shall be notified of any planned confined space entries.

B. No personnel shall enter a confined space before a permit has been completed and posted on site.

C. All contractors must supply their own monitoring and safety equipment for confined space entry.

4.10 Contractors will observe and honor all signs posted in the area in which they are working. Restricted areas are not to be entered without the express direction of the project manager.

4.11 Personal fall protection is required when working on unprotected surfaces 6 feet or more above ground. (See Guide 6 "Working at Elevations" for additional information and requirements when working at elevations).

4.11.1 Electrical Safety is a critical concern to Norwich Public Utilities. All work related equipment is to be de-energized unless live circuit/equipment testing and maintenance is required. Line work can only be performed by "Qualified and Trained Employees" wearing the appropriate PPE and arc blast protection. NFPA 70-E requirements are to be enforced for all live work. (See Guide 7 "Electrical Safety" for additional information and requirements).

4.12 Any required Excavations shall follow the applicable OSHA standards. See "Guide # 8 – Excavations and Trenches" for additional contractor information and requirements.

5.0 Disclaimer

The provisions of this section should be considered as an introduction and not a substitute for a thorough understanding of the subjects. Furthermore, it is for information purposes only. This Document does not relieve the Contractor of its obligations to (1) control the manner and means by which it and its employees, subcontractors and agents perform work or services for Norwich Public Utilities and (2) independently ascertain what health and safety practices are appropriate and necessary for the performance of such work or services. Contractors are expected to be familiar with and follow appropriate health and safety practices, including those required by the Federal Occupational Health and Safety Act ("OSHA") and those set forth in applicable Occupational Safety and Health Administration (OSHA) regulations, as well as any other applicable federal, state or local code.

CONTRACTORS SAFETY REQUIREMENTS ACKNOWLEDGEMENT FORM

I have received copies and read all the NORWICH PUBLIC UTILITIES "Contractors Safety Requirements" including the accompanying Guides. I understand these rules and agree to comply with them in entirety.

_____

Contractor Representative

_____

Company Name

_____

Date

This signed document was given to the following NORWICH PUBLIC UTILITIES representative:

_____

NORWICH PUBLIC UTILITIES Representative

_____

Date

GUIDE 1: HAZARD COMMUNICATION

OVERVIEW

OSHA requires that the hazards associated with all chemicals used or stored at a job site be evaluated. This information must be communicated to employees who may be exposed to these chemicals or use them in their daily jobs. The process for informing employees about the chemicals, their locations and potential hazards is called a Hazard Communication (HAZCOM) program. In general, this program includes requirements and procedures for container labeling and other forms of warning procedures for obtaining and retaining material safety data sheets (MSDSs) and employee training.

MINIMUM HAZCOM REQUIREMENTS

In order to work at any Norwich Public Utilities facility or on any project, all contractors must, at least, meet the following requirements:

1. If any hazardous material is used or stored at the job site, the contractor's written HAZCOM program must be available to all contractor and Norwich Public Utilities personnel for review upon request.

2. The HAZCOM program must include procedures for:
   - Labeling containers and the use of warning forms;
   - Obtaining and retaining MSDSs;
   - Specific worker training requirements;
   - Documentation that these training requirements have been completed by each worker;
   - A list or inventory of hazardous material at the job site.

3. The contractors' supervisor must inform all workers about the hazardous material at the job site when they are first assigned to a project and whenever a new hazardous material is brought to the site.

4. Workers must be informed of the location of:
   - The HAZCOM program;
   - The list/inventory of hazardous substances;
   - The locations of MSDSs and the procedures for obtaining a copy of an MSDS;
   - These must all be available for each worker to review during their work period.

5. The Norwich Public Utilities representative must be informed of all chemicals brought to the site.

6. Each contractor must obtain information from the Norwich Public Utilities representative regarding chemicals that Norwich Public Utilities uses or stores at the site.

7. When more than one contractor is working at a job site, each contractor must inform the other(s) concerning the location of their MSDSs and procedures for labeling and worker protection.

8. THE PRIME CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE HAZCOM PROGRAM ON THE JOB SITE.

9. All containers will be labeled.
   - Labels on hazardous material containers will not be defaced or removed.
   - The labels will identify the substance in the container and appropriate warnings about the substance.
   - The material identity will match the material currently in the container, its MSDS, and the overall list/inventory.

10. An MSDS must be available at the job site for every chemical that is present at the site.
    - A documented training program will be provided to every worker at the job site. This training will include:
        - Information regarding the HAZCOM program;
        - Health and environmental hazards of every chemical used at the job site;
        - Ways to detect the presence of hazardous materials at a job site (including monitoring methods and devices used);
        - How to read and understand the information contained on an MSDS; and
        - How workers can protect themselves from harmful exposure (e.g., safe work practices, personal hygiene, and protective equipment).

GUIDE 2: CHEMICAL SAFETY AND HANDLING

OVERVIEW

Federal and State laws as well as Norwich Public Utilities require that specific procedures are followed to properly handle chemicals to protect workers and prevent spills. These procedures include those for storing, handling, transferring and processing chemicals.

MINIMUM CHEMICAL SAFETY AND HANDLING REQUIREMENTS

Prior to working at any Norwich Public Utilities facility or project, all contractors must, at a minimum, meet the following requirements.

1. The contractor must assure that the equipment brought into a Norwich Public Utilities site to deliver or store hazardous chemicals is in good condition and that all equipment required is operating.

2. Contractor personnel must be licensed and/or have the necessary handling permits or certifications. Documentation must be present with the driver or on the vehicle at all times for inspection by a Norwich Public Utilities representative.

3. Contractor personnel must be thoroughly familiar with operation of equipment and the use of materials or chemicals used at any Norwich Public Utilities facility.

4. Contractor personnel should have knowledge of the physical properties, hazards and personal protective equipment (PPE) required. All contractor personnel shall be provided with appropriate PPE for the chemicals and hazards present.

5. Spill response equipment shall be available on location to contain or control a reasonably anticipated release or spill. All chemical spills at a Norwich Public Utilities facility or location must be reported to a Norwich Public Utilities authorized representative immediately upon discovery.

6. Contractor will provide to Norwich Public Utilities a complete inventory of chemicals brought onto a Norwich Public Utilities facility or location. Contractor must have all material safety data sheets (MSDS) for the material carried and available on request.

7. At the end of the project the contractor shall remove any chemicals that were not used.

GUIDE 3: FIRE PROTECTION AND PREVENTION

OVERVIEW

Fire safety and prevention is critical to the effective operations of Norwich Public Utilities facilities. Norwich Public Utilities focuses on responsibly safeguarding human and business assets to avoid a fire or explosion that may cause injury or disrupt operations. All contractors performing construction and maintenance operations must implement measures to prevent and control fires, if one occurs.

FIRE PREVENTION AND FIRE CONTROL REQUIREMENTS

Prior to working at any Norwich Public Utilities facility or project, all contractors must, at a minimum, meet the following requirements.

1. The contractor program must identify the fire protection requirements and procedures.
2. The contractor must identify personnel who are trained in the use of fire extinguishers and fire fighting techniques and can fight a fire during the early or incipient stage.
3. A Norwich Public Utilities Representative will be informed of all fire or explosion occurrences.
4. Ensure all field offices, shanties and storage facilities are constructed in accordance with applicable codes and fabricated noncombustible material for protection against fire.
5. The contractor must identify and inform Norwich Public Utilities operations that present a potential fire hazard, for example hotwork (welding, grinding and cutting) and the use of flammable liquids and gases.
6. Contractor must implement procedures to eliminate and control fire hazards including housekeeping, electrical safety, safety procedures for hot work, storage and handling of flammable and combustible liquids and compressed gases.
7. Good housekeeping standards must be enforced in the work area, including the requirements that waste, rubbish and flammable materials and rags be removed from the area daily.
8. All waste, rubbish and flammable materials must be stored in approved containers.
9. Non combustible tables or shelves, or protected work area will be used for hot work.
10. Storing flammable liquids in approved safety cans that are painted red with a yellow band around the can and labeled to identify the contents.
11. Storing combustible liquids in green safety cans that are labeled to identify the contents.
12. Storing all Flammable Combustible Liquids (FCL's) in closed approved metal cabinets and only storing quantities of these liquids on-site that do not exceed the minimum amount required for efficient operation.
13. Prohibit the use of gasoline and other highly flammable liquids for cleaning.
14. Using approved pumps or approved self-closing faucets and drip pans when dispensing FCL from drums or portable tanks.
15. Class B/C rated fire extinguishers will be located in close proximity to FCL areas and monthly and annual inspections will be performed to ensure that the units are ready for use.

16. In the event of a fire involving compressed gases, the gases will be permitted to burn and not extinguished, under any circumstances.

17. Oil, grease and highly volatile liquids must not be stored near oxygen cylinders.

18. Smoking is prohibited near flammable or combustible liquids and gases.

19. Using liquefied petroleum gas (LPG) indoors for cutting and/or welding operations shall be limited to small quantities and no more than a 1-pound bottle shall be stored in the building.

20. Open flames or spark-producing tools must not be used in any enclosure where an explosion concern may exist until testing indicates that an explosion hazard does not exist.

21. Obtain a NPU Hot Work permit if working in vicinity of a natural gas regulator or LNG facility.

GUIDE 4: PERSONAL PROTECTIVE EQUIPMENT

OVERVIEW

For many tasks, personal protective equipment (PPE) is as essential to the job as any tool. OSHA requires that every employer evaluate all tasks associated with a project to determine the hazards associated with these tasks and the appropriate PPE to be worn by each affected employee. This hazard assessment must be documented.

MINIMUM PPE REQUIREMENTS

In order to perform work at any Norwich Public Utilities facility or project, all contractors must, at least, meet the following requirements.

1. All employers must conduct a hazard assessment prior to the start of every project and as conditions change on the project to determine the types of PPE necessary for each task.

2. The results of the hazard assessment must be communicated to every employee on the project prior to the start of work and as conditions change.

3. All workers must e trained to recognize the need for and types of PPE necessary, the proper use of PPE, the limitations of PPE, and proper care and disposal of PPE.

4. All workers must be trained in the procedures for inspecting PPE prior to use to ensure it provides the required protection.

5. All PPE used must meet applicable American National Standards Institute (ANSI) standards.

6. All PPE must be maintained in a sanitary and reliable condition.

7. Where employees supply their own PPE, the employer is responsible for ensuring the adequacy, maintenance and sanitation of this PPE.

8. Hard hats must never be changed or modified in any way and must be appropriate for the type of work being performed.

9. Eye protection must be appropriate for the type of work being performed and must be equipped with side shields.

10. Burning goggles must be equipped with appropriate filtering lenses for the work being performed.

11. Gloves must provide adequate wrist and hand protection based on the tasks being performed and must be compatible with and resistant to any potential hazard (sharps, chemical, electrical, etc.)

12. Safety shoes or boots must be fitted with protective toe guards.

13. Additional PPE may be necessary for certain situations, for example overboots or rubber boots should be worn for wet conditions or chemical spills, etc.

14. Protective clothing (reusable or disposable) must be appropriate for the type of work being performed.

15. Orange or lime colored reflective vests, approved by the U.S. Department of Transportation must be worn when working in areas exposed to or adjacent to vehicle traffic.

16. Workers required to wear hearing protection must be allowed to select the type of devices they wish to wear from a number of suitable devices.

17. Flame resistant garments are required in areas where there is a potential for arc or flash.

GUIDE 5: HEARING CONSERVATION

OVERVIEW

Noise is defined as unwanted sound. Noise can cause sudden traumatic temporary hearing loss, long-term slowly occurring hearing loss that is irreversible, disruption of communication and masking of warning devices and alarms. These long-term effects may occur at noise levels lower than are constant and daily.

MINIMUM HEARING CONSERVATION REQUIREMENTS

In order to perform work at any Norwich Public Utilities facility or project, all contractors must, at least, meet the following requirements.

1. Workers must not be exposed to noise levels above those stated in the regulations.

2. All noise levels must be measured on the A-weighted scale by a trained person.

3. When noise exposure includes two or more periods at different noise levels, the combined noise exposure must be calculated.

4. When noise levels exceed the permissible limits, worker exposure must be controlled through engineering controls, administrative controls, personal protective equipment (PPE) or a combination of these.

5. Engineering controls consist of isolating, enclosing or insulating equipment or operations or substituting quieter equipment or operations.

6. Engineering controls are always preferred over other controls.

7. Administrative controls involve rotating workers to jobs having lower noise exposures and reducing the time that each worker is exposed.

8. PPE, for example earplugs and earmuffs, must be rated to reduce the noise exposure to within acceptable limits.

9. A noise exposure at or above 85 decibels on the A-weighted scale (dBA) averaged over an 8-hour time period (with or without PPE) requires a formal written hearing conservation program.

10. A hearing conservation program must include:
    - Noise monitoring;
    - Procedures for employee notification;
    - Provisions to permit employees to observe monitoring;
    - Initial and annual audiometric testing and an evaluation of the audiogram by a qualified professional;
    - A noise training program for all affected workers, and;
    - Formal record keeping.

11. The following table is a guide to common noise levels:

Permissible Duration (dBA)	Examples of Noise Sources
15	Wooded Forest
25	Quiet Bedroom
35	Library
65	Normal Speaking
75	General Office Area
85	Average Machine Shop

Action Level for Hearing Conservation Program – 85 dBA

8 Hours	90
6 Hours	92
4 Hours	95
3 Hours	97
2 Hours	100 Air Spray Operation
1.5 Hours	102
30 Minutes	110 Power Table Saw
15 Minutes	115
7.5 Minutes	120
4 Minutes	125 Rock-n-Roll Concert
2 Minutes	130 Aircraft Jet Engine/Ear Pain Threshold
NOT TO EXCEED	140

12. A standard rule of thumb for noise states that when standing face-to-face at a distance of 1 to 2 feet, if it is necessary to raise your voice to be heard, the background noise exceeds 85 dBA.

GUIDE 6: WORKING AT ELEVATIONS

OVERVIEW

Falls from elevated work areas are one of the leading causes of death each year in occupational settings. Fall prevention is provided by engineering controls such as safety railings or personal fall protection systems. Precautions should also be taken to protect personnel from falling objects. A competent person is required to manage all processes involving scaffolding to ensure that scaffolding is erected, moved, used and dismantled safely.

MINIMUM WORKING ELEVATION REQUIREMENTS

In order to perform work at any Norwich Public Utilities facility or project, all contractors must, at least, meet the following requirements.

1. Elevated surfaces include openings (pits), open-sided platforms, floors or runways, stairs, ladders, mobile scaffolding, lifting equipment (aerial lifts and ladders).

2. Work performed at elevations must include safety harnesses and lifelines including:

    - Working on unprotected surfaces 6 feet or more above the ground or water.
    - Working on scaffolding 6 feet or move above the ground not equipped with proper railing.
    - Work on lifts where portions of the railing must be removed.

3. Lifelines/harnesses must be inspected and comply with the American National Standards Institute (ANSI) standards and be used according to manufacturers' operating procedures.

4. The lanyard must be a minimum of one-half inch nylon or equivalent and must not allow a fall of greater than 6 feet or one that would contact any lower level.

5. A body harness must be worn and a lanyard attached to the boom strap when working from an aerial lift device. Body belts are prohibited.

6. All open-sided floors, platforms or runways where a fall of 6 feet or more may occur must have railings and toeboards on all open sides.

7. Approved ladders will be used and inspected before each use to ensure their integrity.

8. Scaffold planking, guardrails, ladders and toeboards must be installed on scaffolds as required by the regulations. A scaffold must be rated for four times its intended load.

9. CLIMBING ON SCAFFOLD CROSS MEMBERS IS PROHIBITED.

10. Scaffolding must be cross-braced or braced diagonally and be plumb, square and rigid. Sections of scaffolding are locked together with cotter pins if uplifting may occur.

11. Lean-to scaffolds are prohibited.

12. Loading limitation of scaffold must not be exceeded.

13. The erection, installation and use of various scaffold types will be in compliance with all laws and regulations and manufacturers operating procedures.

GUIDE 7: ELECTRICAL SAFETY

OVERVIEW

Electrical safety is an important component to any safety program. To minimize personal injury from contact with energized sources, workers must be trained in fundamentals of electrical safety and all electrical hazards on a project must be identified and corrected. Only properly licensed electricians may perform any electrical work on Norwich Public Utilities projects.

MINIMUM ELECTRICAL SAFETY REQUIREMENTS

In order to perform work at any Norwich Public Utilities facility or project, all contractors must, at least, meet the following requirements.

1. Before work begins, all electric circuits, exposed or concealed, that may be contacted by workers must be posted with warning signs.

2. All workers must be notified of the location and hazard involved with nearby electrical circuits and protective measures taken.

3. Workers must not work near any part of an electrical circuit unless they are protected against shock by guarding or by de-energizing and grounding the circuit.

4. Workspaces, walkways and similar locations must be kept free of electrical cords and tools.

5. Equipment must not be stored around electrical cabinets to prevent access.

6. Workers must inspect all electrical equipment, including extension cords, for the following hazards:
    - Missing ground pins on plugs (except double-insulated);
    - Insulation pulled free from plugs or support connections;
    - Damaged insulation;
    - Exposed wires; and
    - Evidence of arcing, sparking or smoking.

7. When any conditions are identified on equipment that makes it unsafe to operate, the equipment must be removed from the site until repaired by a qualified person.

8. Portable lamps must be covered by a fixed, grounded (if metal) guard and equipped with an insulated handle.

9. All underground utilities must be marked prior to any groundbreaking activities.

10. Flexible cords must be suitable for the condition and location of use and must be used as appropriate.

11. Three-wire extension cords must be used and must be rated for hard or extra-hard use.

12. Splices and/or taps are prohibited in extension cords.

13. Extension cords must not be fastened with staples, hung on nails or suspended on wires.

14. Workers must be trained in the safety-related work practices that pertain to their job and cannot work near electrical hazards without training to recognize and avoid the hazard.

15. Electrical workers must test all equipment to verify if energy is present.

16. Only qualified, trained workers may test electrical equipment.

17. Workers must properly lockout and tagout any circuit or equipment being worked on and verify the equipment is de-energized.

18. Personal protective equipment used by electrical workers must be appropriate and in good condition.

19. Portable metal ladders and ladders with metal reinforcement are prohibited near energized electrical equipment.

20. ALL electrical equipment used on a project (hand tools, etc.) must be protected with a ground-fault circuit interrupter (GFCI).

21. Materials must not be stored in transformer vaults.

22. AC and DC wiring systems must be properly grounded.

23. Proper clearance from overhead power lines must be maintained at all times.

Guide 8: Excavation and Trenching

Overview

Excavation operations are among the first actions taken at a project site. Accidental cave-ins of earth that has been excavated account for a large majority of fatalities each year. In many cases, workers receive no warnings when excavated ground collapses and are suddenly trapped under tons of soil.

Minimum Excavation Requirements

In order to perform work on any Norwich Public Utilities facility or project, all contractors must, at least, meet the following requirements. Please note that additional requirements may be necessary based on job-specific activities.

- ALL UTILITIES MUST BE MARKED-OUT BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION.

- A trench is considered an excavation.

- All underground hazards (electric lines, gas/water lines, boulders, etc.) must be de-energized or removed/supported appropriately.

- Hand digging must be conducted near known or suspected underground systems.

- Ramps or runways used as a means of entry/exit for excavations must be designed by a competent person.

- A ladder or other safe means of exit must be used in excavations greater than 4 feet deep and cannot be greater than 25 feet from all workers in the excavation.

- Entering an excavation during digging is prohibited.

- When the atmosphere in an excavation is/can become hazardous, Proper atmospheric testing must be conducted as required by the Confined Space Program., Section 6 in this Safety Guideline.

- Daily inspections of the excavation and surrounding areas must be conducted by a competent person before work begins and as needed during the shift.

- Excavations must be shored or braced if nearby structures (buildings, sidewalks, etc.) may become unstable.

- All material, including excavated soil, must be stored at least 2 feet from the side of the excavation.

- Workers may only pass over an excavation on properly constructed walkways/bridges with guardrails in place.

- Adequate physical barriers must be provided around all excavations.

- Adequate protective systems must be used in excavations unless:

    - The excavation is entirely in stable bedrock; or

    - The excavation is less than 5 feet deep AND has been examined by a competent person who has found no signs of potential cave-ins.

- All excavations greater than 5 feet deep must be properly sloped, shored, braced, shielded, or protected by a system designed by a professional engineer.

- If a potentially hazardous material is encountered during excavation, all work must stop until the material can be evaluated by a Safety Professional.

Regulatory

A complete text of the requirements for Excavations can be found in Title 29 Code of Federal Regulations, Part 1926, Subpart P.

Guide 9: Asbestos Awareness

Overview

Asbestos has been used in hundreds of different types of insulation products and building materials. Asbestos-containing materials (ACM) can release asbestos fibers into the air if damaged. To minimize the release of fibers and the potential for exposure concerns, the handling and removal of ACM is highly regulated. The highlights of our Company program are:

- Contractors are required to ensure that ACM is not inadvertently contacted or disturbed.

- Suspect ACM must be assumed to be ACM until results of sampling by a certified individual and analysis by a certified lab proves the material to be non-ACM.

- Contractors will comply with the local, state and federal regulations for ACM work.

Minimum Asbestos Awareness Requirements

When working in any Norwich Public Utilities facility or on any Norwich Public Utilities project, all contractors must meet, at a minimum, the following requirements. The contractor is responsible for ensuring that all controls and requirements are identified to address job-specific activities.

- All contractors handling ACM will be required to be certified and in accordance with applicable OSHA standards and be trained in the specific tasks they will perform.

- When contractor personnel contacts or disturbs ACM, the contractor will develop an Asbestos Abatement Work Plan that outlines the procedures for planning and completing the project/activity and will submit the Work Plan to the Norwich Public Utilities Project Coordinator for approval. The Contractor is responsible for the proper filing, permits and fees for projects that will disturb ACM.

- The contractor will use necessary equipment (negative pressure air machines, respirators, etc.) for activities that disturb ACM to control the releases of fibers and to ensure the safety of personnel.

- The contractor will comply with federal, state and local regulations, including approved site work procedures, asbestos abatement, disturbance control, personal and facility decontamination procedures, housekeeping practices, final cleanup requirements and clearance procedures, and project engineering control methods.

- The contractor will use the proper personal protective equipment and air monitoring procedures.

- The contractor will provide and maintain a Medical Surveillance Program for employees.

- The Storage/transport/disposal of ACM will comply with federal, state and local regulations.

- The contractor will maintain asbestos project and employee records for projects including, but not limited to, exposure monitoring records, medical records, training records, fit-test records, and project specific records, such as the amounts and types of asbestos abated, logbooks, waste transportation information and site identification information, etc.

Regulatory

- Title 29, Code of Federal Regulations (CFR), Occupational Safety and Health Administration (OSHA), Part 1910.1001 - General Industry Standards for Asbestos.
- Title 29, CFR, OSHA, Part 1926.1101 - Construction Standards for Asbestos.