LANL Building Official

Listing of Approved IBC Testing Agencies, Fabricators, and Products July 16, 2019

This listing is published pursuant to the LANL International Building Code (IBC) Program defined by Chapter 16 of the LANL Engineering Standards (click <u>here</u>), and is posted on that same site. See that program for process and restrictions.

For testing agencies, presence in these listings is necessary for performance of IBC-related work for LANL or its contractors and subcontractors. LBO approval does not negate Subcontractors' responsibility to assure that testing agencies and fabricators perform correctly.

CAUTION FOR NUCLEAR FACILITY WORK: Presence of any firm or product on these listings does not also indicate evaluation or approval for use in nuclear-related work from a nuclear QA standpoint. For that use, items or services must also be either commercial-grade dedicated or supplier listed on LANL's QA Division Institutional Evaluated Suppliers List (IESL), here (LANL internal).

This LBO listing includes (in a single listing):

- 1. Approved testing agencies (lab and field material testing); ref. ESM Chapter 16 Section IBC-TIA.
- 2. Non-destructive examination (NDE) and/or welding inspection; ref. ESM Chapter 13.
- 3. Shop fabricators of steel and precast concrete who may self-perform in-shop inspections); see ESM Chapter 16 Section IBC-FAB.

Discussion of LANL Building Official (LBO) approved products and related listing follows the above.

For questions, suggestions, or concerns regarding this listing, please contact:

- 1. Testing Agencies, Fabricators, and Special Inspection: Ed Lucero, Chief Inspector (505-665-5207, edlucero@lanl.gov).
- 2. Welding: David Bingham, Welding Chief Inspector (505-664-0416, <u>dbing@lanl.gov</u>)
- 3. NDE: Kelly Bingham, 505-667-6167, kellyb@lanl.gov

For administrative (e.g., personnel) updates please notify oruch@lanl.gov

Testing Agency and Fabricator Summary of Approvals

CAUTIONS: Limitations/scope-of-approval and other details on pages that follow Weld inspection approval is not per these listings but via <u>this</u> internal LANL website database

New Mexico											
Firm	Concrete (C)	Masonry (M)	Metal ID Testing (ID)	NDE (NDE)	Soil (S)	Geotech Testing (G)	Steel Fab (SF)*	Concrete Prefab (CP)	Comments		
Concrete, Aggregate, and Asphalt Testing	x				x				Las Vegas, NM		
Daniel B. Stephens & Associates						x			ABQ, within scope of AASHTO certifications		
LANL (e.g., Triad, LLC)	X		Х	Χ	X		Χ		Fab at SM-38 only. All inspections by CM-CE.		
NV5 (formerly Allwyn and Kleinfelder)	x				X	x			ABQ office, TWF Project Site Testing Facilities only		
Premier NDT Services				Χ					Farmington		
Terracon	X				Х	Χ			ABQ office only		
Western Technology	X			X	Χ	Χ			ABQ office only		
Wood Group/Amec Foster Wheeler	x	x			X	x			ABQ office only		
Yearout Industrial							Χ		ABQ		

* CAUTION: <u>Structural steel fabricators</u> whose work includes <u>seismic load or seismic-force-resisting structures</u> (<u>SFRS</u>) or demand-critical welds</u> are subject to project-specific IBC reviews and approvals for processes, procedures, qualifications and materials <u>prior to start</u> and may require shop inspections by LANL approved IBC Inspectors prior to, during, or after fabrication—in addition to the LBO approval herein.

Out-of-State										
Firm	Concrete (C)	Masonry (M)	Metal ID Testing (ID)	(adn) adn	Soil (S)	Geotech Testing (G)	Steel Fab (SF)*	Concrete Prefab (CP)	Comments	
BlueScope Buildings NA							Χ		Visalia, CA location only	
Bridge Brothers									Anderson, SC; aluminum pedestrian structures only	
CTL-Thompson Testing Agency, Denver	x								Only durability testing per ASTM C 666, prisms in water tank.	
Diversified Metal Products							Χ		Idaho Falls, ID	
Great Denver Iron							x		Denver, CO. LBO reevaluation required before next use.	
Hirschfeld Industries				x			x		San Angelo, TX plant; NDE: Ultrasonic, Magnetic Particle, Visual and AWS-CWI; fab approval currently limited to TWF Project.	
IMR Metallurgical Services, Louisville KY			x						Full range of mechanical and chemical testing of metals	
Independence Steel and Rigging							x		Pima, AZ	
JR Custom Metal Products							Χ		Wichita, KS	
Mistras Services, Denver				X					Radiography, dye penetrant, ultrasonic, and magnetic particle	
MMI Tank and Industrial Services, Inc.							x		Phoenix, AZ	
NUCOR–Building Systems–Utah, LLC							x		Brigham City, UT. Steel fab on DEOS Project, with conditions. Other work requires evaluation.	
Premier Steel Fab (Tulsa, OK area)							x		Excludes demand critical; additional review/approval required for seismic force-load- resisting	
RedGuard							X		Wichita, KS	
Stork Testing and Metallurgical Consulting, Houston				x					Houston location/staff only: liquid penetrant, magnetic particle, and ultrasonic testing only	

* CAUTION: <u>Structural steel fabricators</u> whose work includes <u>seismic load or seismic-force-resisting structures</u> (<u>SFRS</u>) or demand-critical welds are subject to project-specific IBC reviews and approvals for processes, procedures, qualifications and materials <u>prior to start</u> and may require shop inspections by LANL approved IBC Inspectors prior to, during, or after fabrication.

Typical Accreditations:

- Concrete—ASTM C 1077
- Masonry –ASTM C 1093
- Soils—ASTM D 3740
- Geotech see heading and table below
- Steel AISC Quality Certification Program for Steel Building Structures & Simple Steel Bridges
- Steel, Seismic AISC 341

Testing Agencies

For testing agencies, approval criteria and the process for becoming listed may be found in ESM Chapter 16 Section IBC-TIA and applicable national and industry standards as listed below.

Evaluations of testing agencies for approval by the LANL Building Official (LBO) generally model the associated national codes/standards identified in the LANL site standards and specifications. These codes, such as ACI 301, ASTM E 329, and other ASTM standards generally require national accreditation for each company, each facility, and mobile units. Evaluations will be done by an LBO-approved chief inspector unless another evaluator is specifically approved by the LBO. The evaluation will focus on verification of national accreditation for the specific type of testing along with verification of key attributes such as, qualified personnel, calibrated devices, proper documentation processes (internally and externally). An example is that the Testing Agency must follow the applicable ASTM or other code(s) used for specific tests including documenting on their reports any cases where they do not follow the specific test methods.

Geotechnical (Subsurface Investigations)

This work (e.g., seismicity, stratigraphy, ground water conditions, slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on soil-bearing capacity, compressibility, liquefaction and expansiveness) shall be performed by an LBO-approved geotechnical firm with a history/expertise in subsurface evaluations and performed under the direct supervision of a qualified geotechnical engineer. In addition (based on the specific edition of the IBC imposed on the project), the registered design professional shall have a fully qualified representative on site during all boring and sampling operations. Subsurface firms must meet these minimum requirements whether or not they are also an approved testing agency; furthermore, an LBO-approved soil testing agency must be used for all analytical soil tests governed by lab accreditations (e.g., ASTM D 3740).

Field Method List

ASTM D2487 Standard Procedure for Classification of Soils for Engineering Purposes

ASTM D2488 Practice for Description and Identification of Soils (Visual-Manual Procedure)

ASTM G57 Standard Practice for Soil Resistivity Using the Wenner Four-Electrode Method

Laboratory Method List

ASTM D422 Standard Test Method for Particle-size Analysis of Soils

ASTM D1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort

ASTM D2216 Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D3740 Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM D3080 Test Method for Direct Shear of Test of Soils Under Consolidated Drained Conditions

ASTM D4318 Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

ASTM D4546 Test Methods for One-Dimensional Swell or Collapse of Soils

AASHTO T-193 Standard Method of Test for the California Bearing Ratio

Selected Standards (Current Editions)

- A2LA for NDE laboratory testing
- AASHTO <u>re:source</u> (formerly AMRL) testing lab accreditation program
- ASNT (American Society for Nondestructive Testing) document SNT-TC-1A on NDE (and ESM Chapter 13 on Welding, Joining, & NDE)
- ASTM E 329, Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
- ASTM E 543, Standard Practice for Agencies Performing Nondestructive Testing
- AWS (American Welding Society) QC-4 for welding qualification testing facilities

- ICC-IAS Accreditation Criteria for Testing Laboratories (AC89)
- ICC-IAS Accreditation Criteria for Fabricator Inspection Programs for Reinforced Concrete (AC157)
- ICC-IAS Accreditation Criteria for Fabricator Inspection Programs for Structural Steel (AC172)
- National Ready Mixed Concrete Association (NRMCA)
- Precast Concrete Institute (PCI)
- Additional specific accreditation programs based on IBC or associated national standards such as ACI, <u>AISC</u>, and ASTM

LBO-APPROVED FIRMS

Allwyn See NV5

Amec see Wood Group

BlueScope Buildings North America, Inc. 7440 DOE AVE VISALIA, CA 93291

(559) 651-5300 http://www.bluescopebuildings.com/

Approved to perform: Steel fabrication

Dan Kumm, President, <u>dan.kumm@bluescopebuildings.na.com</u> Craig True, Quality Manager, <u>craig.true@bluescopebuildings.na.com</u>

Audit History: EL/DB: 2017-5-23 LBO ES-DO: 17-021 6/27/17. IAS <u>MB-147</u> through 1/1/2021; no AISC 6/2017 TO.

Bridge Brothers 1435 BLECKLEY ST ANDERSON, SC 29625

866-806-0847 https://bridgebrothers.com/

Approved to perform: Aluminum pedestrian structure fabrication only.

Jacob Barnes, Eng Mgr, engineering@bridgebrothers.com Aaron Gentilucci, sales@bridgebrothers.com

Audit history: LBO: 5/29/19 DB (ES-DO-19-014)

Concrete, Aggregate, and Asphalt Testing, LLC (CA2 Testing) Shipping: 414 BIBB INDUSTRIAL DR Mailing: PO Box 1228 LAS VEGAS NM 87701-1228

505-718-3030 fax: 505-425-9159 www.ca2testing.net

Approved to perform: concrete (including durability) testing; soils testing but not T88, D422.

Owner/Eng Manager: Lee Ann Marquez, PE, <u>leaann@ca2testing.com</u>

Audit history: LBO: 10/18/2011 JLR (ES-DO: 12-001) Certifications last verified: 6/7/2017 TO

CTL | Thompson

1971 W 12TH AVE DENVER CO 80204-3415

303-825-0777 fax: 303-825-4252 http://www.ctlthomspon.com/

Approved to perform: concrete durability testing per ASTM C 666 only, Denver Office only

Eng Manager: Damon Thomas, PE <u>dthomas@ctlthompson.com</u>

Audit history: LBO 4/8/2011 JLR (ES-DO 11-018) Certifications last verified: 6/7/2017 TO

Daniel B. Stephens & Associates, Inc. (DBS&A) Soil Testing Lab

4400 ALAMEDA BLVD. NE, SUITE C ALBUQUERQUE, NM 87113-1520

505-889-7752 fax: 889-0258 http://www.dbstephens.com/ http://www.dbsa-soil-lab.com/

Approved to perform: Geotech testing within scope of AASHTO <u>re:source</u> certifications

Joleen Hines, Laboratory Ops Manager, jhines@dbstephens.com

Audit history: LBO: 4/6/2105 RT (ES-DO: 15-018, 4/7/15). Certs last verified: 5/8/2018 TO

Diversified Metal Products, Inc.

3710 N. YELLOWSTONE HWY IDAHO FALLS, ID 83401

208-529-9655 fax: 208.529.9836 http://www.diversifiedmetal.com/

Approved to perform: Steel fabrication

Mr. Tony Pascoe, Business Development Representative, <u>tonyp@diversifiedmetal.com</u> Mike Henderson, Pres Rebecca McCellan, QA Mgr

Audit History: KK: 2017-6-1 LBO ES-DO: 17-012 6/7/17. No AISC 6/2017 TO.

Great Denver Iron, Inc. 4975 JACKSON ST

DENVER CO 80216-3017

303-991-0537 fax: 303-991-0538 http://www.greatdenveriron.com/

Approved to perform: Steel fabrication; however, LBO reevaluation required before next use. Seismic force/load resisting work requires re-evaluation/approval.

Contact: Bill Dowd, Owner & GM, bill@greatdenveriron.com

Audit history: JLR/DAB (ES-DO: 11-021, 7/28/2011) Certifications last verified: <u>AISC</u> BU current 6/2017 TO

Hirschfeld Industries

112 WEST 29TH STREET SAN ANGELO TX, 76903

325-486-4201 info@hirschfeld.com http://www.hirschfeld.com/

Approved to perform: NDE: Ultrasonic, Magnetic Particle, Visual and AWS-CWI methods Steel fab: Currently limited to TWF Project at San Angelo facility. Seismic force/load resisting work requires re-evaluation/approval.

Contact: Dennis Hirschfeld, CEO, dennis.hirschfeld@hirschfeld.com

Audit history: Fab 3/13/15 KK (ES-DO: 15-015, 3/13/15); NDE: PB 4/9/15 (ES-DO: 15-019). No AISC 6/2017 TO.

IMR Metallurgical Services - Louisville 4102 BISHOP LANE LOUISVILLE KY 40218-4504

502-810-9007 fax: 502-810-0380 http://www.imrtest.com/index_louisville.html

Approved to perform: Full range of metallurgical testing per ASTM F606, etc.

Lab Director: Mr. Brett Miller, PE: KY 23339, bmiller@imrlouisville.com Director of Metallurgy: Tom Ackerson, PE, tom.ackerson@imrtest.com

Audit history: CMRR-S-11-036 5/25-24/11 DLT; LBO 6/8/2011 JLR (ES-DO 11-020)

Independence Steel & Rigging, LLC

PO BOX 738 PIMA, AZ 85543-0738

(near Safford, AZ)

Owner/Dir. Of Ops: Nick DeRusha

Audit history: INP-103286-0012 r1 7/23/2018 TD/DB, ES-DO: 18-021 8/10/2018

JR Custom Metal Products Inc. 2237 S. WEST ST CT

WICHITA, KS 67213

316-263-1318 http://jrcmp.com/

Approved to perform: Steel fabrication

Gary D. Richards, General Manager, <u>GRichards@JRCMP.com</u>, c316-650-2685

Audit History: KK/DB: 2017-6-6 LBO ES-DO: 17-018 6/16/17. No AISC 6/2017 TO.

Kleinfelder, Inc. See NV5

LANL

PO 1663 LOS ALAMOS NM 87545-0001

505-664-5265 http://www.lanl.gov/

Approved to perform: concrete, soils (D4318 pending) metals ID, NDE, steel fabrication (SM-38 only), weld inspection. Fab of seismic force/load resisting systems requires evaluation/approval.

Eng Manager: Jim Streit, ES-DO, 606-0600 QA Contact: Lou Kummer or Darren Meadows Materials Test Facility: Michael Olson Supervising ACI Level 2/Engr: Richard Rodarte

Audit history: SM-38: MAM: QPA-DO-18-013/AR(17)-017.001 Appv. 8/20/18 (ES-DO-18-023). Certifications last verified: 6/7/2017 TO

Mistras Services

6660 E 47TH AVENUE DR DENVER CO 80216-3407

303-393-9689 fax: 303-393-9760 http://www.mistrasgroup.com/

Approved to perform: NDE methods: Radiography, dye penetrant, ultrasonic, and magnetic particle

Executive: James Mikeska, Mountain Region, james.mikeska@mistrasgroup.com

Audit history: DAB/JLR (ES-DO: 11-022, 8/10/2011)

MMI Tank and Industrial Services, Inc. 3240 S 37TH AVE PHOENIX AZ 85009-9700 602-272-6000 http://www.mmitank.com/

Approved to perform: Steel fabrication. Seismic force/load resisting work requires re-evaluation/approval.

Mr. Stacy Pinckard, President, Stacy@MMItank.com

Audit history: Initial: PB 6/11/15 (ES-DO: ES-DO-15-026, 7/9/2015). No AISC 6/2017 TO.

NUCOR Building Systems–Utah, LLC

P.O. BOX 907 1050 N. WATERY LANE BRIGHAM CITY, UT 84302

435-919-3100 fax: 435-919-3101 http://www.nucorbuildingsgroup.com/

Approved to perform: Steel fabrication on DEOS Project, with conditions (work on other projects or fab of seismic force/load resisting systems requires evaluation/approval).

Mr. Mark VanDyken, General Manager Mr. Dana Christensen, Certifications & Standards Coordinator, <u>dana.christensen@nbsut.com</u>, 435-919-3252

Audit history: Partial by DB 11/2016 (ES-DO: 17-004) Certifications last verified: 11/29/16 DB. <u>IAS</u> MB-107 for metal bldgs exp. 7/1/19. No AISC 6/2017 TO.

NV5 9019 WASHINGTON ST NE STE/BUILDING A ALBUQUERQUE NM 87113

505-344-7373 fax: 505-344-1711 http://www.nv5.com/

Approved to perform: concrete, soils, geotech testing at: (1) ABQ office and (2) TRU Waste Facility Project Site Testing Facility only.

VP and Eng/Lab/Field Manager: John North, PE, G.E., john.north@nv5.com QC Contact: <u>benjamin.trujillo@nv5.com</u> Kevin Clah, <u>kevin.clah@nv5.com</u> <u>robert.abeyta@nv5.com</u>

Audit history: As Kleinfelder: ABQ 9/6/13 JLR [ES-DO 13-016] TRU: RT 2/3/2015 [ES-DO 15-010]. Allwyn acceptance: ES-DO 15-022 (5/6/15). NV5 acceptance: ES-DO-15-025 (7/8/15) Certifications last verified: 5/8/2018 TO

Premier NDT Services, Inc.

2198 BLOOMFIELD HWY FARMINGTON NM 87401

505-325-1407 www.premierndt.com/

Approved to perform: NDE methods: Radiography, liquid penetrant, ultrasonic, magnetic particle, visual, and AWS-CWI.

Contact: Cody Nygern, VP Operations

Audit history: Initial: DAB/KB (ES-DO: 12-041, 8/27/2012)

Premier Steel Services, LLC

16420 S HIGHWAY 75 GLENPOOL, OK 74033

918-227-0110; fax: 918-227-0113 premiersteelservices.com

Approved to perform: Steel fabrication excluding demand-critical welding. Seismic force/load resisting work requires LBO re-evaluation/approval.

Eng Manager Andy L. Vanaman, President, avanaman@premiersteelservices.com QA Contact: Rick Humphreys, rhumphreys@premiersteelservices.com

Audit history: LBO: 5/2019 (ES-DO: 19-011); Certifications last verified: <u>AISC BU</u> current 6/2019 TO. Work history: RLUOB, DARHT W.E.

RedGuard, LLC 401 W 47th ST SOUTH WICHITA, KS 67217

855-733-4827 https://redguard.com/

Approved to perform: Steel fabrication

Mr. Tim Scheer, Project Manager, tims@redguard.com

Audit History: KK: 2017-6-9 LBO ES-DO: 17-019 6/16/17). No AISC 6/2017 TO.

Stork Testing and Metallurgical Consulting, Inc.

222 CAVALCADE STREET - or- P.O. BOX 8768 HOUSTON TEXAS 77009

1-888-STORK55 (786-7555) or 713-692-9151 fax: 713-696-6307 http://www.storksmt.com E-Mail: info.tmc@us.stork.com

Approved to perform (Houston location/staff only): NDE of these types: liquid penetrant, magnetic particle, and ultrasonic testing

Contact: Mr. Neal Ferguson Audit history: LBO: 12/20/10 (ES-DO 11-012)

Terracon 4905 HAWKINS ST NE ALBUQUERQUE NM 87109-4345

505-797-4287 fax 505-797-4288 http://www.terracon.com/offices/albuquerque/

Approved to perform: concrete, soils geotech testing, ABQ office only.

Dept and QA/QC Manager: Hugo Carreon, <u>hmcarreon@terracon.com</u> Lab and field supervisor, LANL Project Mgrr: Mr. Sadeke Konte, <u>askonte@terracon.com</u> Office/Eng Manager: Mike Anderson, PE (NM 12132), <u>meanderson@terracon.com</u>

Audit history: LBO: 9/6/13 JLR 9/9 em Certifications last verified: 5/8/2018 TO

Western Technologies, Inc. 8305 WASHINGTON PL NE ALBUQUERQUE, NM 87113-1670

505-823-4488 fax 505-821-2963 www.wt-us.com/w/

Approved to perform: Concrete, soils, geotech testing, and NDE using radiography, dye penetrant, ultrasonic, and magnetic particle. ABQ office only.

Eng Manager Jeff Boyd, PE (NM 12412), <u>j.boyd@wt-us.com</u> QA Contact: Andrew L. Cuaderes, Sr., VP, <u>a.cuaderes@wt-us.com</u> NDE: Clifford Pettigrew, Senior Special Inspector, <u>c.pettigrew@wt-us.com</u> Field and lab supervisor: Justin Kelly

Audit history: NDE: 3/1/2011 KB (ES-DO 11-017); LBO: 9/6/13 JLR 9/9 em Non-NDE certs last verified: 5/8/2018 TO

Yearout Industrial, LLC.

8501 WASHINGTON ST NE ALBUQUERQUE, NM 87113

505-884-0994 fax 505-883-5073 Approved to perform: Steel fabrication. Seismic force/load resisting work requires re-evaluation/ approval.

Contact: Bryan Yearout, President c: 505-991-5062, <u>bryan@yearout.com</u>

Audit history: KB 12/2015; LBO 12/16/15 (ES-DO-16-002). No AISC 6/2017 TO.

Wood Group/AMEC Foster Wheeler Environment & Infrastructure Inc.

8519 JEFFERSON ST NE ALBUQUERQUE NM 87113-1603

505-821-1801 http://www.amecfw.com/

ABQ office only approved to perform: concrete, masonry, soils, geotech testing

Hugo Carreon, QA and Mgr of Tech Services hugo.carreon@woodplc.com Dan Kwiecinski, P.E., VP, Eng Manager <u>dan.kwiecinski@woodplc.com</u> Abe Sandoval, Materials Dept Branch Mgr <u>abe.sandoval@woodplc.com</u> Saul Alanis, Project Manager <u>saul.alanis@woodplc.com</u> David A. Kondziolka, P.E., consultant <u>dave.kondziolka2@woodplc.com</u> Ken Wylie, P.E., <u>ken.wylie@woodplc.com</u> Jason Olivar, Lab Supervisor, Jason.Olivar@woodplc.com

Audit history: LBO: 9/6/13 JLR 9/9 em Certifications last verified: 6/7/2017 TO

LBO-APPROVED PRODUCTS

General

LBO approval of suppliers and manufactured products for structural and other work is governed by ESM Chapter 16 Section <u>IBC-GEN</u> (*Section 8.0*).

Also at time of writing, IBC-GEN (Rev. 11, 11/29/2018) said:

- 8.1. Under 104.9, 104.11, and the Special Cases section of the IBC (1705.1.1), proprietary products must be approved by the LBO. Structural examples are anchor channels, mechanical reinforcing steel splices/couplers, and post-installed (PI) anchors. As such, from an IBC standpoint only:
 - A. Such components are <u>automatically</u> approved by the LBO if they are PI anchors used in a seismically exempt application (see definition).¹ For other products, they are also automatically approved if they meet both of the following:
 - 1. The components chosen are IBC-compliant-labeled (has been accepted by the most recent ES report from ICC-ES or ER report from IAPMO valid for the code edition in use or newer edition²) AND
 - 2. The design and installation complies with the conditions of use and restrictions specified in the ICC report (in addition to and including following manufacturer instructions, particularly where more stringent). Installation must be verified by special inspector(s) when required by ICC ES Report and/or IBC Ch.17 on special inspection.
 - B. Products accepted by Los Angeles Dept. of Buildings (see footnote) are also acceptable at LANL except where specifically limited by the LANL Standards including Master Specs, when used in non-nuclear service and with any applicable conditions placed by LADBS.³
 - 1. LADBS are at <u>http://netinfo.ladbs.org/rreports.nsf</u>
 - C. Other special case components not automatically approved as noted above must be submitted to the ES-EPD Structural Team which will broker LBO approval prior to use.⁴ *Guidance: This may involve derating; e.g., using less tension and/or shear capacity than documented for a concrete anchor /embedment, using a mechanical rebar splice /coupler capacity that results in the final assembly 'performing' only within elastic region, etc.*

¹ Incorporates and supersedes CIR-16-002 and outcome of a 5/2016 meeting re Electrical-Safety-Based Penetration Rule & Installation of Seismically-Exempt P-I Anchors (GP minutes dated 5/25). Safety class and safety significant items used in nuclear facilities are required to be procured from an ASME NQA-1 qualified supplier or require a commercial grade dedication. ² When a given product's research report isn't compliant with the applicable IBC edition, contact ESM POC for guidance

³ LADBS Building Code tab Information Bulletin IB/P/BC-2014-119 — *Alternate Building Materials/Products Approval Requirements* LADBS IB website

⁴ In addition to this requirement to obtain LBO approvals, it is important to note that the general focus of ML-1/2 is primarily a quality assurance evaluation of the manufacturer's or supplier's quality program. The focus of IBC Ch.17 is to assure that proper independent testing has been accomplished.

Specific Product Approvals

Products listed in LANL Master Specifications shall be considered LBO-approved for IBC use.

Disclaimer: Listed products and service providers have received LBO approval within the context discussed by this document. They are not an endorsement of any product or provider beyond that approval, nor guarantee of future work/sales. Finally, they do not imply that other products or providers will necessarily be unacceptable if submitted for approval; that depends upon subsequent LBO evaluation.