

**ADMIN-1-B31.9-DOCS Minimum System Documentation**

No.	B31.9 Code Heading	B31.9 Code Reference	Code Text	How	Who	Applic. to System? (Y/N)
<b>B31.9-2017 Mandatory Minimum Documentation Requirements</b>						
1	927 Welded Fabrication of Metals	927.6.4 Qualification Records	The employer shall maintain copies of the procedure and performance qualification records specified by ASME BPV Code, Section IX that shall be available to the owner or the owner's agent	Records of WPS and Welding PQR available where the work is being done	LANL for self-performed and for work done at LANL; Subcontractor for work done on or offsite	
2	936 Inspection and Examination	936.3 Responsibility for Examination	Inspection does not relieve the manufacturer, fabricator, or erector of responsibility for performing all required examinations and preparing suitable records for the owner's use.	Examination Record showing evaluation to acceptance criteria 936.6.1 Girth Welds and Groove Welds. Limitations on imperfections are as follows: (a) Cracks. None permitted. (b) Lack of Fusion. The length of unfused areas shall not be more than 20% of the circumference of the pipe, or of the total length of the weld, and not more than 25% in any 6 in. (152 mm) of weld. (c) Incomplete Penetration. The total joint penetration shall not be less than the thickness of the thinner of the components being joined, except that incomplete root penetration is acceptable if it does not exceed the lesser of 1/32 in. (1 mm) or 20% of the required thickness, and its extent is not more than 25% in any 6 in. (152 mm) of weld. (d) Undercut and Reinforcement. Undercut shall not exceed the lesser of 1/32 in. (1 mm) (e) Concave Root. Concavity of the root surface shall not reduce the total thickness of the joint, including reinforcement, to less than the thickness of the thinner of the components being joined. (f) Excess Root Penetration. The excess shall not exceed the lesser of 1/8 in. (3.2 mm) or 5% of the inside diameter of the pipe. (g) Weld Surfaces. There shall be no overlaps or abrupt ridges and valleys. or 12 1/2% of wall thickness. Thickness of weld reinforcement shall not exceed 3/16 in. (4.8 mm).	Subcontractor or LANL if self-performed	

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<b>B31.9-2017 Owner Approval</b>						
3	900 GENERAL		The Code generally specifies a simplified approach for many of its requirements. A designer may choose to use a more rigorous analysis to develop design and construction requirements. When the designer decides to take this approach, the designer shall provide to the owner details and calculations demonstrating that design, construction, examination, and testing are consistent with the criteria of this Code. <b>These details shall be adequate for the owner to verify the validity and shall be approved by the owner.</b> The details shall be documented in the engineering design.	Variance/Alternative Method Form 2137 as Alternative Method	LANL Owner approved, COE website storage	
4	922 Design Requirements Pertaining to Specific Piping Systems . .	922.3.2 Joints	(a) Threaded, welded, brazed, or flared joints shall be used within buildings. A pipe thread compound suitable for oil shall be used on threaded joints. Joints relying on friction or a combustible material shall not be used. Brazing or flare fittings shall be wrought. Flanged or grooved joints may be used with a gasket material meeting the requirements of API 607 or <b>another standard acceptable to the owner.</b>	Variance/Alternative Method Form 2137 as Alternative Method	LANL Owner approved, COE website storage	
5	927 Welded Fabrication of Metals	927.6.2 Procedure Qualification by Others	In order to avoid duplication of effort and subject to the <b>approval of the owner</b> , WPSs qualified by a technically competent group or agency may be used, the following are met: (a) The WPSs meet the requirements of ASME BPV Code, Section IX and any additional qualification requirements of this Code. (b) The employer has qualified at least one welder or welding operator following each WPS. (c) The employer's business name shall be shown on each WPS and on each qualification record. In addition, qualification records shall be signed and dated by the employer, thereby accepting responsibility for the qualifications performed by others.	Variance/Alternative Method Form 2137 as Alternative Method	LANL Owner approved, COE website storage	
6	927 Welded Fabrication of Metals	927.6.3 Performance Qualification by Others.	In order to avoid duplication of effort and subject to the approval of the owner, <b>an employer</b> may accept the performance qualification of a welder or welding operator made by a previous employer.	For work done by LANL or on LANL property Variance/Alternative Method Form 2137 as Alternative Method	For work done by LANL or on LANL property LANL Owner approved, COE website storage	

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7	936 Inspection and Examination	936.5 Type and Extent of Required Examination	Unless otherwise specified in the engineering design, the type of examination shall be visual examination in accordance with the method in para. 936.4.1. If the degree of examination and inspection or the basis for rejection is to be more rigorous than required by this Code, it shall be a matter of prior agreement between the fabricator or installer and the purchaser.	Variance/Alternative Method Form 2137 as Alternative Method	LANL Owner approved, COE website storage	
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<b>B31.9-2017 Qualifications</b>						
8	927 Welded Fabrication of Metals	927.6.4 Qualification Records.	The employer shall maintain copies of the procedure and performance qualification records specified by ASME BPV Code, Section IX that shall be available to the owner or the owner's agent	Records of WPS and Welding PQR available where the work is being done	LANL for self-performed and for work done at LANL; Subcontractor for work done on or offsite	