U.S. DEPARTMENT OF TRANSPORTATION

PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION

SPECIAL PERMIT

Special Permit Information:

Docket Number:	PHMSA-2016-0009
Requested By:	NEXUS Gas Transmission, LLC
Operator ID#:	39192
Date Requested:	January 12, 2016
Original Issuance Date:	June 29, 2018
Effective Dates:	June 29, 2018 to June 29, 2028
Code Section(s):	49 CFR 192.625

Grant of Special Permit:

By this order, subject to the terms and conditions set forth below, the Pipeline and Hazardous Materials Safety Administration (PHMSA) Office of Pipeline Safety (OPS)[1] grants a special permit (PHMSA-2016-0009) to NEXUS Gas Transmission, LLC[2] (NEXUS) waiving the odorant requirements in 49 Code of Federal Regulations (CFR) 192.625 for 10.93 miles of pipeline from Mile Post (MP) 245.16 to MP 256.09 located at the downstream section of the NEXUS pipeline located in Washtenaw County, Michigan. This special permit requires NEXUS to implement additional conditions on the design, construction, operations, and maintenance of the 256.09-mile, 36-inch-diameter natural gas transmission pipeline, as described in this special permit. The NEXUS pipeline system consists of 256.09 miles of 36-inch pipeline, four (4)

[1] Throughout this special permit the usage of "PHMSA" or "PHMSA OPS" means the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration Office of Pipeline Safety.

[2] NEXUS is a joint venture that is owned equally by Spectra NEXUS Gas Transmission, LLC, an indirect wholly-owned subsidiary of Enbridge, Inc., and DTE NEXUS, LLC, an indirect wholly-owned subsidiary of DTE Energy Company. On February 27, 2017, Enbridge Inc. and Spectra Energy Corp closed their merger transaction. Enbridge Inc. now indirectly wholly-owns Spectra Energy Partners' (SEP's) general partner and partially-owns SEP.

compressor stations and six (6) meter stations with a design flow capacity of 1.5 Billion cubic feet per day (Bcf/d) of natural gas.

Based on the determination in the Special Permit Analysis and Findings (available in the docket) that this special permit with conditions will maintain pipeline safety, PHMSA OPS hereby grants special permit PHMSA-2016-0009 as follows:

I. Special Permit Segments and Special Permit Inspection Area:

States of Ohio and Michigan

- ***Ohio Counties of Columbiana, Stark, Summit, Wayne, Medina, Lorain, Huron, Erie, Sandusky, Wood, Lucas, Henry, and Fulton***
- ***Michigan Counties of Lenawee, Monroe, and Washtenaw***

On the condition that NEXUS complies with the terms and conditions set forth below, this special permit waives compliance from 49 CFR 192.625 for 10.93 miles of ***special permit segment 1*** as described below and in Appendix A - NEXUS Pipeline – Overview Map. This special permit allows NEXUS to operate ***special permit segment 1*** without odorized gas and at its maximum allowable operating pressure (MAOP) of 1440 pound per square inch gauge (psig)[3] when the conditions of this special permit are implemented. The Federal pipeline safety regulations in 49 CFR 192.625 require natural gas pipeline operators to odorize natural gas when over 50 percent of the downstream mileage is in a Class 3 or 4 location as defined by 49 CFR 192.5. This special permit also prescribes additional terms and conditions outside of ***special permit segment 1***, in ***special permit segment 2*** and the ***special permit inspection area*** as defined below.

- ***Special permit segment 1*** – is defined as 10.93 miles of NEXUS pipeline from MP 245.16 to MP 256.09 (end of the NEXUS pipeline) located at the downstream section of the NEXUS pipeline in Washtenaw County, Michigan.

[3] The NEXUS pipeline will have a potential impact radius of 942.6 feet as determined by 49 CFR 192.903 for gas transmission pipeline integrity management determination of high consequence areas.

- ***Special permit segment 2*** – is defined as 7.28 miles of NEXUS pipeline from MP 237.88 (Washtenaw County, Michigan county line) to MP 245.16 located in Washtenaw County, Michigan.
- ***Special permit inspection area***[4] – is defined as the NEXUS pipeline from MP 0 in Columbiana County, Ohio to MP 256.09 in Washtenaw County, Michigan.

  The NEXUS pipeline ***special permit inspection area*** totals 256.09 miles of 36-inch pipe as described in Attachment A and includes ***special permit segment 1*** and ***special permit segment 2.*** The ***special permit inspection area*** is in the Ohio and Michigan counties listed above. The NEXUS pipeline system consists of the NEXUS pipeline, four (4) compressor stations, six (6) meter stations and associated facilities located in the Ohio and Michigan.

PHMSA hereby grants this special permit for the NEXUS pipeline ***special permit segment 1, special permit segment 2, and the special permit inspection area*** based on the findings set forth in the *"Special Permit Analysis and Findings"* and the "*Final Environmental Assessment and Findings of No Significant Impact*" documents , which both can be read in their entirety in Docket No. PHMSA-2016-0009 in the Federal Docket Management System (FDMS) located on the internet at www.Regulations.gov.

II. Conditions:

PHMSA OPS grants this special permit subject to implementation of the following conditions:

I. ADDITIONAL DESIGN, MATERIALS, CONSTRUCTION, OPERATIONS & MAINTENANCE REQUIREMENTS

To provide an equivalent level of safety in the absence of odorization, PHMSA issues this special permit with additional design, materials, construction, operations and maintenance requirements which are intended to decrease the likelihood of a release of gas. PHMSA believes that these additional measures designed to prevent leaks will ensure an equivalent level of safety and increase the level of safety to a greater extent than simply introducing odorant into the gas stream.

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[4] ***Special permit inspection areas*** throughout these conditions include ***special permit segment 1*** and ***special permit segment 2*** unless specifically defined as not applicable or if the ***special permit segment*** has more stringent conditions.

A. Additional Design Requirements for the NEXUS pipeline

1. **Pipeline Internal Inspection**: The NEXUS pipeline (***special permit inspection area***[5]) must be capable of internal inspection in accordance with 49 CFR 192.150 and must include permanently installed launchers and receivers capable of running in-line inspection (ILI) tools. Launchers and receivers must be installed at the below mileposts (MP):

Launcher/Receiver	MP	County	State
Launcher	0.0	Columbiana	Ohio
Receiver	63.6	Medina	Ohio
Launcher	63.6	Medina	Ohio
Receiver	184.6	Lucas	Ohio
Launcher	184.6	Lucas	Ohio
Receiver	256.09	Washtenaw	Michigan

2. **Mainline Valve – Monitoring and Remote Control**: All mainline valves on the NEXUS pipeline within the ***special permit inspection area*** must be equipped for remote operation, monitoring and control, or remote monitoring and automatic control in accordance 49 CFR 192.620(d)(3)(iii). Appendix C is a table of the mainline valves by milepost located on the NEXUS pipeline route, all of which must be remote controlled valves with operating pressure monitored upstream and downstream of the mainline valve. Closure of the appropriate valves following a pipeline rupture[6] must occur as soon as practicable from the time the pipeline rupture and its location are confirmed,[7] not to exceed 30 minutes from such confirmation. NEXUS procedures must include operational criteria for prompt remote valve closure and pipeline shut-down.

B. Additional Material Requirements for the NEXUS pipeline

1. **Pipe Manufacturing Specification**: The 36-inch mainline pipe within the ***special permit inspection area*** must be manufactured using American Petroleum Institute Standard 5L

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[5] The ***special permit inspection area*** includes ***special permit segment 1*** and ***special permit segment 2*** when referenced in these special permit conditions.

[6] Condition D.10.c.i below defines a pipeline rupture and response timing for a large-volume rupture event.

[7] The pipeline valve section location to be closed and isolated (following a rupture) must be confirmed by NEXUS through Gas Control or other field operations personnel monitoring of the appropriate pipeline pressures, pressure changes, or flow rate changes through a compressor discharge section or by location confirmation from responsible persons.

"Specification for Line Pipe" (API 5L)[8] product specification Level 2. This type of pipe conforms to more stringent manufacturing specifications (as compared to standard API 5L Level 1 specifications) with respect to chemical composition, notch toughness, strength properties, and nondestructive evaluation.

2. **Pipe Diameter to Wall Thickness**: The ratio of the specified outside pipe diameter of the pipe to the specified wall thickness (d/t) must be less than 100 for the pipeline within the ***special permit inspection area***.

3. **Pipe Toughness for Fracture Arrest**: The toughness properties for pipe must ensure at least ninety-nine percent (99%) probability of fracture arrest within eight pipe lengths with a probability of not less than ninety percent (90%) within five pipe lengths as defined in 49 CFR 192.112(b) for the pipeline within the ***special permit inspection area***. The Battelle Two Curve Method (BTCM), assuming conservative gas composition data and the application of a Leis Correction Factor (1.3x), is an acceptable method of confirming fracture control. Pipe fracture arrest meeting Condition B.3 must be confirmed prior to placing the NEXUS pipeline into operational service.

4. **Pipe Mill Inspection of Pipe Seams**: All the pipe seams on pipeline to be installed in the ***special permit inspection area*** must be ultrasonically tested after cold expansion and/or mill hydrostatic testing. Defective pipe seams found in the pipe mill after cold expansion and/or mill hydrostatic testing must be cut-out.

5. **Pipe Mill Pressure Test**: All pipe to be used within the ***special permit inspection area*** must be hydrostatically tested at the mill at a test pressure corresponding to a hoop stress of 95 percent specified minimum yield strength (SMYS) for 10 seconds.

6. **Pipeline Design Factor**: Pipe must be installed with a design factor and design pressure appropriate for a Class 3 location in accordance with 49 CFR 192.111 in the ***special permit segment 1***.

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[8] API 5L editions and other industry standards "incorporated by reference" are listed in 49 CFR 192.7. If PHMSA adopts a revised edition of a referenced standard such as API, NACE International (NACE) or ASME standards into 49 CFR Part 192, the referenced requirements of those revised standards are automatically incorporated into these special permit conditions unless noted otherwise.

C. Additional Construction Requirements for the NEXUS pipeline

1. **Pipeline Girth Weld Quality Assurance**: Within the ***special permit inspection area*** welding of pipeline girth welds in accordance with 49 CFR Part 192, Subpart E must include:

    a. Welding procedures must be developed utilizing sound engineering practices and must minimize the potential for hydrogen cracking;

    b. No pipe movement shall be allowed until the root bead is completed;

    c. Weld procedures must include adequate preheat to prevent hydrogen cracking. Temperature must be monitored and maintained throughout the welding process. The following conditions apply:

        i. For low-hydrogen welding processes (i.e. mechanized gas metal arc welding (GMAW), hybrid shielded metal arc welding (SMAW)/ flux-cored arc welding (FCAW), and low hydrogen SMAW welding (E6010 root/8010 hot pass/8018 fill and cap)), preheat measurement must be monitored periodically;[9]

        ii. For manual SMAW welds completed using cellulosic electrodes, preheat measurement must be verified and documented for all weld passes where propane heating is being used. Where preheat is by induction heating, heat must be verified at the start of welding;[10]

    d. One hundred percent (100%) non-destructive examination (NDE) of all girth welds;

    e. All girth weld NDE results must include reviews by both ASNT certified Level II and III NDE technicians;

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[9] Periodic preheat monitoring must be conducted by welding inspection staff as a documented activity not less than once per welding rig per day. Compliance checks must be daily, at random times, and not announced by an independent welding inspector. Records of this inspection activity must be documented and maintained for 5-years.

[10] The induction heating element maintains the heat throughout the welding process and additional heating checks will not need to be conducted.

f. Girth weld NDE must use technology optimized for crack detection. Automatic Ultrasonic Testing (AUT) presents a high probability of detection (POD) of cracks whereas utilizing manual radiography without optimizing the radiographic procedure for crack detection presents a lower POD. In areas where manual radiographic procedures are implemented D4 film or a film of better quality must be used;[11]

g. For manual SMAW welds completed using cellulosic electrodes in ***special permit segments 1 and 2***, one of the following additional requirements will apply:

   i. Final girth weld NDE must be delayed a minimum of 24-hours following weld completion;[12] or

   ii. Following weld completion, post-weld heating at a minimum temperature of 400° Fahrenheit (F) will be applied for a minimum of 20 minutes, followed by installation of an insulating blanket over the weld for a period of one (1) hour. Girth weld NDE will be performed following removal of the insulating blanket. [13]

h. The ***special permit inspection area*** must be inline inspected within six (6) months after placement into service with an ILI Tool set-up to detect possible girth weld cracks and any girth weld cracking findings must be remediated within six (6) months after receipt of the ILI vendor report. If environmental permitting or right-of-way factors beyond NEXUS' control should prevent the completion of remediation within six (6) months, NEXUS must submit a letter justifying the delay and providing the anticipated date of completion to the appropriate PHMSA Central or Eastern Region Director. NEXUS must submit a request to the

[11] NEXUS installed a road bore at approximate MP 251.27 to MP 251.32 prior to finalization of the special permit conditions. D5 film was used for the NDE of these five (5) girth welds, and due to accessibility of being in a road bore will not be required to re-examine with D4 film. The D5 film must be examined by a NDE Level 3 technician for quality and acceptability.

[12] This requirement does not apply to five (5) girth welds located in a road bore at approximate MP 251.27 to MP 251.32.

[13] This requirement does not apply to five (5) girth welds located in a road bore at approximate MP 251.27 to MP 251.32.

appropriate PHMSA Central or Eastern Region Director for any extended evaluation and remediation schedules. NEXUS must receive a letter of "no objection" for any extended remediation schedules; [14] and

i. Any girth weld pressure test failure or girth weld cracks discovered during construction must undergo a root cause investigation, with lessons learn utilized on the NEXUS pipeline and any future pipeline construction projects.

2. **Post Construction In-line Inspection**: NEXUS must run a post construction high resolution (HR) deformation/caliper inline inspection (ILI) tool[15] within the ***special permit inspection area*** prior to placing the pipeline into service. Based on the results of the high-resolution deformation tool, NEXUS must:
   a. Excavate, investigate and, as necessary, remediate all dents greater than two percent (2%) depth within the ***special permit inspection area*** prior to placing the pipeline into service.
   b. Additionally, within the ***Special Permit Segment 1*** and ***Special Permit Segment 2,*** excavate, investigate and, as necessary, remediate:
      i. All dent plus ovality indications greater than six percent (6%); and
      ii. All plain ovality indications greater than five percent (5%).

3. **Post Construction Backfill Coating Verification**: NEXUS must conduct a post backfill direct current voltage gradient (DCVG) or alternating current voltage gradient (ACVG) survey within the ***special permit inspection area*** no later than three (3) months after placing the pipeline into gas service. The DCVG or ACVG survey shall not be required where the survey is impractical, such as water crossings, horizontal directional drills, and road bores.

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[14] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities, including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

[15] The (HR) deformation/caliper ILI tool assessment shall be done using NEXUS Company Procedure IP-MP2.5 and using HR deformation/caliper ILI tools that achieve a +/- 0.5% tool tolerance capability using individual finger sensors that are outside of cup-type sensors. The ILI tool tolerance shall not be applied for anomaly sizing purposes.

Any construction damaged coating with a voltage drop classified as moderate or severe (IR drop greater than thirty-five percent (35%) for DCVG or 50 dBμV for ACVG)[16] or severe based on NACE International Standard Practice 0502-2008, "Pipeline External Corrosion Direct Assessment Methodology", (NACE SP 0502-2008) must be investigated and repaired.[17] A minimum of two (2) coating holiday indications must be excavated, classified and/or remediated per each survey crew each time the survey is performed.

4. **Pressure Testing**: The ***special permit segment 1*** pipe must be hydrostatically tested to a pressure equal to two (2) times MAOP. [18,19]

5. **Pipeline Depth of Cover**: The NEXUS pipeline within the ***special permit segment 1*** and ***special permit segment 2*** must be installed with a minimum depth of cover of 36 inches. The minimum depth of cover in roadside ditches, roadways, highways, and stream crossings must be 60 inches. Any pipe in the ***special permit segment 1*** and ***special permit segment 2*** that does not meet this Condition must have additional safety measures implemented in areas with reduced depth of cover based upon the threat, such as lowering the pipeline, increased pipeline patrols, protective concrete slabs, or additional line markers.

6. **Non-Shielding Pipe Coating**: Coatings that can shield cathodic protection ("CP"), such as polyethylene coatings (shrink sleeves and tape coatings), must not be used within the ***special permit inspection area.***

7. **Construction Quality Management and Assurance Plan**: The NEXUS pipeline within the ***special permit segment 1*** and ***special permit segment 2*** must be constructed with a

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[16] If PHMSA adopts a revised edition of a referenced standard such as NACE International (NACE) or ASME standard into 49 CFR Part 192, the referenced requirements of those revised standards are automatically incorporated into these special permit conditions.

[17] The terms "repair", "remediate", and "remediation" of pipe coating includes repair of damaged external pipe coating, where required to maintain cathodic protection of the pipeline in accordance with 49 CFR 192.463.

[18] The mainline valve assembly located at MP 248.5 must be tested to a pressure of at least 1.5 x MAOP (not 2 x MAOP), since a higher test pressure would exceed the test pressure rating of the valves and ANSI 600 fittings. If the valve assembly at MP 248.5 is not tested in the pipeline ditch, but is either hauled by truck or lifted into the pipeline ditch for tie-ins, the valve assembly must be inspected for damage and tie-in welds must have tie-in pipe excavated to minimize lateral and longitudinal line-up stresses on the tie-in girth welds.

[19] To prevent the potential for excessive combined stress, NEXUS may limit the post-installation hydrostatic test pressure for horizontal directional drills (HDD) in ***special permit segment 1*** to 1.8 x MAOP, provided a 49 CFR Part 192, Subpart J hydrostatic test to 2 x MAOP was conducted on the HDD pipe prior to installation.

construction quality management and assurance plan that includes the applicable conditions of this special permit and the following requirements:

a. The quality assurance plan must address pipe inspection, hauling and stringing, field bending, welding, non-destructive examination of girth welds, applying and testing field applied coating, lowering of the pipeline into the ditch, padding and backfilling, and hydrostatic pressure testing.

b. The quality assurance plan for applying and testing field applied coating to girth welds must be:

   i. Equivalent to that required under 49 CFR 192.112(f)(3) for pipe; and

   ii. Performed by an individual with the knowledge, skills, and ability to assure effective coating application.

8. **Pipe Warning Tape**: Warning tape must be installed approximately one (1) foot above the pipeline within the ***special permit segment 1*** and ***special permit segment 2,*** except for locations where is impracticable to install warning tape, such as road bores and horizontal direction drills.

D. Additional Operations and Maintenance Requirements

1. **Baseline Assessment**: A baseline assessment of the NEXUS pipeline within the ***special permit segment 1*** and ***special permit segment 2*** using a high resolution (HR) magnetic flux leakage (MFL) ILI tool must be conducted within three (3) years of the NEXUS pipeline in-service date. Anomalies must be remediated in accordance with Condition D.3 below.

2. **Integrity Management Program**: NEXUS must incorporate the requirements of this special permit into its written integrity management program (IMP) and standard operating procedures (SOPs).[20] NEXUS must treat ***special permit segments 1 and 2*** as *"covered segment"* in a *"high consequence area (HCA)"* in accordance with 49 CFR Part 192, Subpart O. Reassessments of the NEXUS pipeline within the ***special permit inspection area*** using HR MFL and HR Deformation ILI must be conducted at the frequency specified for HCAs in

[20] Pipeline operating procedures such as NEXUS SOP's are required by 49 CFR 192.603(b) and 192.605.

49 CFR 192, Subpart O.[21] If NEXUS identifies threats within the ***special permit inspection area*** that require the running of additional ILI Tools, pursuant to 49 C.F.R. Part 192, Subpart O, such as for crack detection[22] or pipe movement from soil or geologic stresses, NEXUS must use the appropriate ILI tools or other evaluation methods for pipeline assessments.

3. **Anomaly Response and Repair**: Anomaly response and repair for the NEXUS pipeline within ***special permit segments 1 and 2*** and the ***special permit inspection area*** must be conducted as required by 49 CFR 192, Subpart O and the below additional evaluation and remediation criteria regardless of HCA[23] status. The required timing for excavation, investigation, and remediation of anomalies based on ILI data or excavation results must be in accordance with 49 CFR 192.485 and 192.933, and must incorporate the appropriate class location design factors and wall loss criteria in the anomaly repair criteria as follows:
   a. ***Special permit segments 1***:
      i. **Immediate response:** Any anomaly within ***special permit segment 1*** that meets either: (1) a failure pressure ratio[24] (FPR) equal to or less than 1.1; or (2) an anomaly depth equal to or greater than 80% wall thickness loss.
      ii. **One-year response:** Any anomaly within ***special permit segment 1*** that meets either: (1) an FPR less than 2.00;[25] or (2) an anomaly depth greater than 40% wall thickness loss.
      iii. **Monitored response:** Any anomaly within a ***special permit segment 1*** that meets both: (1) an FPR equal to or greater than 2.00; or (2) an anomaly depth less than or equal to 40% wall thickness loss. The schedule for the

[21] If 49 CFR 192.939(a) integrity management reassessment intervals should change from seven (7) years to some other reassessment interval under eight (8) years, NEXUS may use that reassessment interval instead of seven (7) years.

[22] "Pipe Crack" activity shall be defined as over both 10 percent wall thickness depth and 2-inches in length.

[23] HCAs in the ***special permit inspection area*** and ***special permit segments 1 and 2*** must have anomalies evaluated and repaired based upon the most stringent requirements of: this special permit; 49 CFR Part 192, Subpart O, or NEXUS' Integrity Management Plan.

[24] Failure pressure ratio is the pipeline anomaly failure pressure divided by the maximum operating pressure of the pipeline.

[25] All pipe installed in ***special permit segment 1*** has a Class 3 location design factor of 0.5 or may have a more conservative design factor.

response must take tool tolerance[26] and corrosion growth rates into account.

b. ***Special permit segment 2 and special permit inspection area:***

i. **Immediate response:** Any anomaly within ***special permit segment 2*** and ***special permit inspection area*** where the pipeline is operating up to 72% SMYS that meets either: (1) an FPR equal to or less than 1.1; or (2) an anomaly depth equal to or greater than 80% wall thickness loss.

ii. **One-year response:**

1. Any anomaly within ***special permit segment 2*** and ***special permit inspection area*** that meets either: (1) a FPR less than 1.39[27] for a Class 1 location pipe; a FPR less than 1.67 for Class 2 location pipe; and an FPR less than 2.0 for Class 3 location pipe; or (2) an anomaly depth greater than 60% wall thickness loss.
2. Any anomaly for Class location changes from original Class 1 to 2 location or original Class 2 to 3 location in accordance with 49 CFR 192.5 and 192.611 that meets either: (1) an anomaly FPR less than the FPR of the original Class location; or (2) an anomaly depth greater than 50% wall thickness loss.

iii. **Monitored response:**

1. Any anomaly within ***special permit segment 2*** and ***special permit inspection area*** that meets both: (1) an FPR equal to or greater than 1.39 for Class 1 location; an FPR equal to or greater than 1.67 for Class 2 location; and FPR equal to or greater than 2.0 for Class 3 location; and (2) an anomaly depth less than or equal to 60% wall thickness loss.
2. Any anomaly repairs for Class location changes from original Class 1 to 2 location or original Class 2 to 3 location in accordance with 49 CFR 192.5 and 192.611 that meets both: (1) an anomaly FPR equal to or

[26]. Tool tolerance shall be applied only to FPR calculations, not to the anomaly depth criteria.

[27] Failure pressure ratio (FPR) is the reciprocal of the design factor. A class 1 location with a 0.72 design factor would have a FPR of 1.39, a class 2 location with a 0.60 design factor would have a FPR of 1.67, and a class 3 location with a 0.50 design factor would have a FPR of 2.00.

greater than the FPR of the original Class location; and (2) an anomaly depth equal to or less than 50% wall thickness loss.

c. **Tool tolerance and corrosion growth rates:** The schedule for the response must take tool tolerance and corrosion growth rates into account for immediate, one-year and monitored responses.

   i. NEXUS must demonstrate ILI Tool tolerance accuracy for each ILI Tool run by usage of calibration excavations[28] and unity plots that demonstrate ILI Tool accuracy to meet the tool accuracy specification provided by the vendor (typical for depth within +10% accuracy for 80% of the time).

   ii. The unity plots must show: a) actual anomaly depth versus predicted depth and b) actual failure pressure/MAOP versus predicted failure pressure/MAOP.

   iii. ILI Tool evaluations for metal loss must use "6t x 6t"[29] interaction criteria or more conservative criteria for determining anomaly failure pressures and response timing.

   iv. Discovery date[30] must be within 90 days of an ILI Tool run for each type ILI Tool (HR-geometry, HR-deformation or high resolution HR-MFL).

4. **Close Interval Surveys**: A close-interval survey ("CIS") must be conducted and areas of inadequate cathodic protection in ***special permit segment 1*** and ***special permit segment 2*** must be remediated[31] within one (1) year of the pipeline in-service date. If environmental permitting or right-of-way factors beyond NEXUS' control should prevent the completion of the CIS within one (1) year from the issuance of this special permit, a CIS and subsequent remediation including coating repair must be completed as soon as practicable, NEXUS must submit a letter justifying the delay and providing the anticipated date of

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[28] Calibration excavations may include previously excavated anomalies or other anomalies with known dimensions that were field measured for length, depth and width.

[29] "6t" means pipe wall thickness times six.

[30] Discovery date is the day, month and year that an Operator receives the ILI Tool run results from the ILI Tool service provider.

[31] The terms "remediate" or "remediation" of pipe coating must include repair of damaged external pipe coating, where required to maintain cathodic protection of the pipeline in accordance with 49 CFR 192.463.

completion to the appropriate PHMSA Central or Eastern Region Director[32] no later than one (1) month prior to the end of one (1) year after the issuance of this special permit and must receive a letter of "no objection" from the appropriate PHMSA Central or Eastern Region Director for a delay. CIS remediation activities must be completed within one (1) year of the finding. NEXUS must submit a written request to the appropriate PHMSA Central or Eastern Region Director for any extended evaluation and remediation schedules. NEXUS must receive a letter of "no objection" from PHMSA prior to implementing an extended CIS and remediation interval.

5. **Close Interval Surveys – Reassessment Interval**: CIS reassessments must be conducted on ***special permit segment 1*** and ***special permit segment 2*** at a frequency consistent with the reassessment intervals specified in 49 CFR 192, Subpart O for HCAs with reassessment intervals not exceeding seven (7) years.[33] Any areas of low CP levels as specified in 49 CFR 192, Subpart I, shall be remediated in accordance with Condition D.7.

6. **Cathodic Protection Test Station – Location**: Spacing between cathodic protection (CP) pipe-to-soil test stations within ***special permit segment 1*** and ***special permit segment 2*** cannot exceed one-half (½) mile. In cases where obstructions or restricted areas prevent test station placement, the test station must be placed in the closest practical location. Within six (6) months of completing a close-interval survey, Nexus must utilize the data gained from this survey to place external corrosion control test stations at identifiable and significant dips in electric potential in accordance with 49 CFR 192.469, in conjunction to the previously agreed upon test stations placed at half-mile intervals. Nexus must utilize the data gained from the CIS to place external corrosion control test stations at identifiable and significant dips in CP

[32] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities, including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

[33] If 49 CFR 192.939(a) integrity management reassessment intervals should change from seven (7) years to some other reassessment interval under eight (8) years, NEXUS may use that reassessment interval instead of seven (7) years.

potential[34] in accordance with 49 CFR 192.469. However, placement of a test station at areas of significant dips shall not be required if NEXUS identifies and remediates the cause of the significant dip, and confirms successful remediation by a follow-up CP survey.

7. **Cathodic Protection – Low Potential Remediation**: Any areas of low CP potential within the ***special permit segment 1*** and ***special permit segment 2*** must be remediated within one (1) year of the finding unless it is impracticable to meet this schedule due to a permitting interval. Permit applications must be submitted within four (4) months of any low CP potential findings. If the schedule cannot be met due to circumstances beyond NEXUS' control, NEXUS must notify the appropriate Director, PHMSA Central or Eastern Region in writing explaining the reasons the schedule cannot be met and obtain a letter of "no objection"[35] from PHMSA prior to implementing the schedule change.

8. **Right-of-Way Patrols:** In addition to the requirements of 49 CFR 192.705 and 192.706, NEXUS must perform right-of-way patrols as follows:

    a. Ground patrols using instrumented leakage detection equipment that can detect gas leaks along the ***special permit segment 1 and special permit segment 2*** at intervals between every five (5) months to seven and one-half (7-½) months, not to exceed seven and one-half (7-½) months, but at least two (2) times per calendar year.

    b. Aerial flyover patrols or ground patrols by walking or driving of the ***special permit inspection area*** right-of-way once a week, not to exceed 10-days, contingent on weather conditions. Should mechanical availability of the patrol aircraft or weather conditions become an extended issue, the ***special permit inspection area*** pipeline

[34] A significant dip is defined as a dip in a potential reading (either an "on" or "off" potential) that is greater in magnitude than 200 mV, occurring within any 100 ft. sample area.

[35] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

aerial flyover patrol must be completed within 21-days of the past patrol by other methods such as walking or driving the pipeline route, as feasible.

c. If either the ground patrols or aerial flyover patrols schedule cannot be met due to circumstances beyond NEXUS' control, NEXUS must notify the appropriate Director, PHMSA Central or Eastern Region in writing of the reasons the schedule cannot be met and obtain a letter of "no objection" [36] within three (3) business days of the exceedance.

9. **Line-of-Sight Markers**: Line-of-sight markers must be installed and maintained within the ***special permit segment 1 and special permit segment 2*** in accordance with 49 CFR 192.620(d)(4)(iv) to the extent practical. Any removed or missing line-of-sight markers must be replaced within 30 days of discovering the marker is removed or missing.

10. **Mainline Valve – Monitoring and Remote Control for Leaks or Ruptures**: All mainline valves for the NEXUS pipeline within the ***special permit inspection area*** must be controlled by a supervisory control and data acquisition (SCADA) system and must be equipped for remote monitoring and control, or remote monitoring and automatic control in accordance 49 CFR 192.620(d)(3)(iii) and the below requirements:

    a. If any crossover or lateral pipe for gas receipts or deliveries connects to the isolated segment between the upstream and downstream mainline valves, the nearest valve on the crossover connection(s) or lateral(s) must be isolated, such that, when all valves are closed, there is no flow path for gas to flow to the leak or rupture site (except for residual gas already in the shut-off segment);

[36] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities, including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

b. Mainline valves must be monitored for valve status (open, closed, or partial closed/open), upstream pressure, and downstream pressure;

c. Closure of the appropriate valves following a pipeline leak or rupture meeting the criteria of Condition D.10.c.i must occur as soon as practicable from the time the pipeline leak or rupture location is confirmed, not to exceed 30 minutes from such confirmation;[37]

i. "Rupture" means a significant breach of a pipeline that results in a large-volume, uncontrolled release of gas. For purposes of this special permit, NEXUS must treat any of the following as ruptures unless and until determined otherwise:

1. An unanticipated or unplanned pressure loss of 10 percent or greater, occurring within a time interval of 15 minutes or less, unless the operator has documented the need for a higher pressure-change threshold in advance due to pipeline flow dynamics that cause fluctuations in gas demand that are typically higher than a pressure loss of 10 percent in a time interval of 15 minutes or less;

2. An unexplained flow rate change, pressure change, instrumentation indication, or equipment function that in the operator's experience may be representative of a large-volume, uncontrolled release or failure; or

3. An apparent large-volume, uncontrolled release or failure observed by either operator personnel, the public, or public authorities, and that is reported to the operator.

ii. Within five (5) minutes of the initial notification to NEXUS, NEXUS must evaluate and identify a rupture, as defined above, as being either an actual leak

[37] The pipeline valve section location to be closed and isolated (if there should be a rupture) must be confirmed by NEXUS through Gas Control or other field operations personnel monitoring of the appropriate pipeline pressures, pressure changes, or flow rate changes through a compressor discharge section or by location confirmation from responsible persons.

event, rupture event or non-rupture event in accordance with operating procedures and 49 CFR 192.615.

d. The NEXUS Gas Control Center must monitor the pipeline 24 hours a day, 7 days a week and must confirm the existence of a leak or rupture as soon as practicable, in accordance with NEXUS pipeline operating procedures;

e. NEXUS must maintain remote monitoring and automatic control equipment, mainline valves, mainline valve operators, and pressure sensors in accordance with 49 CFR 192.631 and 192.745. All remote monitoring and automatic control equipment including pressure sensors must have backup power to maintain communications and control to the NEXUS Gas Control Center during power outages;

f. NEXUS must conduct a point-to-point verification between SCADA displays and the mainline valve, sensors, and communications equipment in accordance with 49 CFR 192.631(c) and (e), or an equivalent verification;

g. All valves used to isolate a leak or rupture must be maintained in accordance with this special permit and 49 CFR 192.745;

h. NEXUS must take remedial measures to correct any valve used to isolate a leak or rupture that is found to be inoperable or unable to maintain shut-off, as follows:

   i. Repair or replace the valve as soon as practicable but no later than six (6) months after the finding;

   ii. Designate an alternative valve within seven (7) calendar days of the finding while repairs are being made. Repairs must be completed within six (6) months; and

   iii. If valve repair or replacement cannot be met due to circumstances beyond NEXUS' control, NEXUS must notify the appropriate Director, PHMSA Central or Eastern Region in writing of the reasons the schedule cannot be met

and obtain a letter of "no objection"[38] from PHMSA prior to implementing the schedule change.

i. NEXUS must establish and maintain adequate means of communication with the appropriate public safety access point (9-1-1 emergency call center) and must notify them if there is a leak or rupture, as well other emergency responders as required in 49 CFR 192.615;

j. NEXUS must immediately and directly notify the appropriate public safety access point (9-1-1 emergency call center) or other coordinating agency for the communities and jurisdictions in which the pipeline is located when a release is indicated; [39] and

k. NEXUS must establish actions required to be taken by a pipeline controller, or the appropriate emergency response coordinator, during an emergency in accordance with these special permit conditions and as required in 49 CFR 192.615 and 192.631.

11. **Interference Currents Control**: Within one (1) year of construction, NEXUS must perform surveys and remediation, with corrosion control implemented, for induced currents from electric transmission lines and other known sources of potential interference within the ***special permit segment 1*** and ***special permit segment 2***. An induced alternating current (AC) or direct current (DC) program and remediation plan to protect the pipeline from corrosion caused by stray currents must be written and implemented within one (1) year of the date of this special permit.

    a. At least once every seven (7) years not exceeding 90 months, NEXUS must perform an engineering analysis on the effectiveness of the AC and DC mitigation measures

[38] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities, including the Michigan Public Service Commission, Manager of Gas Operations, and the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

[39] NEXUS must designate the pipeline controller or the appropriate operator emergency response coordinator in its operating procedures and train the pipeline controller or the appropriate operator emergency response coordinator for coordinating with emergency responders.

and must evaluate and remediate any AC interference between 20 and 50 Amps per meter squared. In evaluating such interference, NEXUS must integrate AC interference data with the most recent ILI results to determine remediation measures. Any discovered AC interference between 20 and 50 Amps per meter squared must be remediated within six (6) months of the finding. If NEXUS decides to not remediate AC interference between 20 and 50 Amps per meter squared, NEXUS must provide a written engineering justification for not remediating such interference to the appropriate PHMSA Region Director[40] and obtain a letter of "no objection" from PHMSA prior to implementing the change. If NEXUS does not receive a "no objection" from PHMSA, NEXUS must remediate the interference.

b. In locations in ***special permit segment 1*** and ***special permit segment 2*** with co-located high voltage alternating current (HVAC) power lines, NEXUS must take interference readings (continuous 24-hour recordings) during the calendar quarter of the known or anticipated highest voltage reading. If there are any significant increases to the amount of electricity/current flowing in any co-located high voltage alternating current (HVAC) power lines, such as from additional generation, a voltage up-rating, additional lines, or new or enlarged substations, NEXUS must perform an AC mitigation survey along the entire co-located pipeline ***special permit segment 1*** and ***special permit segment 2*** right of way within six (6) months of any such change.

c. Within six (6) months of the engineering analysis, as required in Condition D.11.a. above, NEXUS must remediate any AC interference greater than 50 Amps per meter squared. Remediation means the implementation of performance measures including, but not limited to, additional grounding along the pipeline to reduce interference currents. Any DC interference that results in CP levels that do not meet

[40] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities, including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

the requirements of 49 CFR Part 192, Subpart I, must be remediated within six (6) months of the engineering analysis.

d. If environmental permitting or right-of-way factors beyond NEXUS' control prevent the completion of remediation within six (6) months of the completion of the engineering evaluation, NEXUS must complete remediation as soon as practicable. NEXUS must also submit a letter justifying the delay and providing the anticipated date of completion to the appropriate PHMSA Region Director no later than one (1) month prior to the end of the six (6) months completion date. Any extended evaluation and remediation schedules submitted to PHMSA from NEXUS must receive a letter of "no objection" from the appropriate PHMSA Central or Eastern Region Director[41] prior to extending the evaluation or remediation schedule.

12. **Landowner Communications**: NEXUS must provide pipeline safety awareness material to residents within the potential impact radius (PIR) of the ***special permit segment 1*** and ***special permit segment 2*** each calendar year.

13. **Annual Report to PHMSA**: Annually,[42] after issuance of this special permit, NEXUS must submit an annual pipeline integrity report[43] to the appropriate PHMSA Central and Eastern Region Director with copies to the Deputy Associate Administrator, PHMSA Field Operations; Deputy Associate Administrator, PHMSA Policy and Programs; Director, PHMSA Engineering and Research Division; Director, PHMSA Standards and Rulemaking Division; Director, PHMSA State Programs; and the Michigan Public Service Commission, Manager of Gas Operations; and the Public Utility Commission of Ohio, Service Monitoring

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[41] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities, including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

[42] Annual reports must be received by PHMSA by the last day of the month in which the Special Permit is dated. For example, the annual report for a Special Permit dated January, 2018, must be received by PHMSA no later than January 31, each year beginning in 2019.

[43] NEXUS must place a copy of each NEXUS annual pipeline integrity report on the PHMSA docket, PHMSA-2016-0009, at regulations.gov.

and Enforcement Department, Gas Pipeline Safety Program Manager summarizing the following and any other significant integrity threats:

a. Any new integrity threats identified during the previous year in the ***special permit inspection area***, and the results of any ILI or direct assessments performed (including any remediated anomalies with their wall loss, length, and unrepaired failure pressure; any un-remediated anomalies over 30% pipe wall loss and their wall loss, length and failure pressure; cracking found in the pipe body; weld seam or girth welds; and dents with metal loss, cracking or stress riser) during the previous year in the ***special permit inspection area***;
b. Summaries of any close interval surveys that find low cathodic protection levels in the ***special permit inspection area*** and a remediation schedule;
c. Any reportable incident or any leak normally indicated on the DOT Annual Report, and all repairs on the pipeline that occurred during the previous year in the ***special permit inspection area***;
d. Any pressure test leaks or failures with a description of the cause in the ***special permit inspection area***;
e. Any mergers, acquisitions, transfer of assets, or other events affecting the regulatory responsibility of the company operating the pipeline;
f. Any population changes in ***special permit segment 1*** that would cause any extensions of ***special permit segment 1*** boundaries into ***special permit segment 2*** from MP 245.16 to MP 237.88; and
g. Any emergency events that cause closure of mainline valves as described in Condition D.10, including the location (County, State and MP) of valves and closure times.

14. **Data Integration**: NEXUS must maintain data integration of special permit condition findings and remediation in the ***special permit segment 1*** and ***special permit segment 2***. Data integration must include the following information: pipe diameter, wall thickness, grade, and seam type; pipe coating; maximum allowable operating pressure (MAOP); class location (including boundaries on aerial photography); high consequence areas (HCAs) (including boundaries on aerial photography); hydrostatic test pressure including any known test failures; casings; any in-service ruptures or leaks; in-line inspection (ILI) survey results

including HR-MFL, HR-geometry/caliper or deformation tools; most recent close interval survey (CIS) surveys; rectifier readings; cathodic protection test point survey readings; AC/DC interference surveys; pipe coating surveys; pipe coating and anomaly evaluations from pipe excavations; stress corrosion cracking (SCC) excavations and findings; and pipe exposures from encroachments. Data integration must be outlined on pipeline route drawings with parallel sections for each integrity category and recent aerial or satellite photography (photography must be taken within three (3) years of initial annual report filing and every three (3) years thereafter).

a. Data integration documentation and drawings to meet Condition D.14.b must be completed beginning with the 2nd annual report of this special permit and must include four (4) years of prior data. Annual data integration documentation must be submitted to PHMSA with NEXUS' annual report, if requested by PHMSA.

b. Data integration must be updated on an annual basis, and, at a minimum NEXUS must conduct an annual review of integrity issues to be remediated.

15. **Pipeline System Flow Reversals**: For pipeline system flow reversals exceeding 90 days in ***special permit segment 1*** or ***special permit segment 2***, NEXUS must prepare a written plan that corresponds to the applicable criteria identified in PHMSA Advisory Bulletin (ADB-2014-04), "Guidance for Pipeline Flow Reversals, Product Changes and Conversion of Service" issued on September 18, 2014 (79 FR 56121, Docket PHMSA-2014-0400). The written flow reversal plan must be submitted to the appropriate PHMSA Region Director prior to implementing a flow reversal.[44] NEXUS must also submit a copy of the plan to the Federal Docket for this special permit, PHMSA-2016-0009, at www.regulations.gov. NEXUS must receive a letter of "no objection" from the appropriate PHMSA Region Director prior to implementing the pipeline system flow reversal through ***special permit segment 1*** or ***special permit segment 2.***

[44] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

16. **Environmental Assessments and Permits**: NEXUS must evaluate the potential environmental consequences and affected resources of any land disturbances and water body crossings needed to implement the special permit conditions for ***special permit segment 1***, ***special permit segment 2,*** or ***special permit inspection area*** prior to the disturbance. NEXUS must obtain all applicable (Federal, State, and Local) environmental permits and adhere to all applicable (Federal, State, and Local) environmental permit requirements when conducting the special permit conditions activity.

17. **Root Cause Analysis for Failure or Leak**: If a leak or rupture (incident as defined by 49 CFR 191.3) occurs in any of the ***special permit inspection areas,*** NEXUS must notify PHMSA's Central or Eastern Region Director within five (5) days of the leak or rupture. A 'root cause analysis' must be performed to determine the cause of the failure and must be sent to appropriate PHMSA Region Director and Director of Engineering and Research Division[45] within 90 days of the incident. If a root cause analysis cannot be performed within 90 days of the incident, NEXUS must submit to PHMSA's Central or Eastern Region Director a request for extension of time. NEXUS must receive a letter of "no objection" from the appropriate PHMSA Central or Eastern Region Director prior to implementing an extended root cause analysis timeframe. PHMSA will review the 'root cause analysis' report to determine if revocation, suspension, or modification of the special permit is warranted based upon incident findings.

18. **Extension of Special Permit Segment**: NEXUS may request to extend the ***special permit segment 1*** to include new or extended contiguous segments in ***special permit segment 2*** from MP 245.16 to MP 237.88 (Washtenaw County, Michigan county line). NEXUS must:
    a. Provide written notice to the appropriate Director, PHMSA Central or Eastern Region; Director, PHMSA Standards and Rulemaking Division; and Director,

[45] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities, including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

PHMSA Engineering and Research Division[46] of a requested ***special permit segment extension***[47] based on actual class locations. NEXUS must include a schedule of inspections, a schedule of any anticipated remedial actions and the location of the new request including survey stationing. All requests for a ***special permit segment 1 extension*** must be submitted in the first six (6) months of the 49 CFR 192.611(d) class location change timing limits, and must include data integration in accordance with Condition D.14 above and information on the potential environmental impacts of the extension to determine whether an environmental assessment and federal register notice are required for the proposed ***special permit segment 1 extension***;

b. Complete all inspections and remediation of the proposed ***special permit segment extension*** to the extent required for ***special permit segment 1***;

c. Comply with all conditions in this special permit for ***special permit segment 1*** for the new ***special permit segment 1 extension*** required for implementation, including submittal of documents to PHMSA required in these special permit conditions and 49 CFR 190.341; and

d. NEXUS must obtain a letter of "no objection" and/or a revised special permit from PHMSA prior to implementing any ***special permit segment extensions***.

19. **Documentation**: NEXUS must maintain all records required by 49 CFR Part 192, as well as the following records for ***special permit segment 1, special permit segment 2,*** and the ***special permit inspection areas:***

    a. Documentation showing that ***special permit segment 1, special permit segment 2,*** and the ***special permit inspection area*** have received a 49 CFR 192.505, Subpart J, hydrostatic test for eight (8) continuous hours and at a minimum pressure of:

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[46] For any special permit condition that requires NEXUS to provide a notice for a "no objection" response from PHMSA, other notice, annual report, or documentation to the appropriate PHMSA Central or Eastern Region Director , NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities, including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

[47] For a ***special permit segment extension*** to be considered by PHMSA, NEXUS must notify PHMSA's Director of Standards and Rulemaking Division to determine the need for a draft environmental assessment.

Class Location	Design Factor	Minimum Pressure Test Factor
Class 1	0.72	1.39 x MAOP (100% SMYS)
Class 2	0.60	1.5 x MAOP
Class 3	0.50	1.5 x MAOP
MP 245.16 to MP 256.09 (*Special Permit Segment 1*)	0.50	2.0 x MAOP

b. Documentation of mechanical and chemical properties including pipe toughness (mill test reports) showing that the pipe in ***special permit segment 1, special permit segment 2,*** and ***the special permit inspection area*** meets the wall thickness, yield strength, tensile strength and chemical composition of the American Petroleum Institute Standard 5L, *"Specification for Line Pipe"* (API 5L), referenced in the 49 CFR Part 192 code at the time of manufacturing.

c. Documentation of compliance with all the conditions of this special permit must be kept for the applicable duration of this special permit for the referenced ***special permit segment 1, special permit segment 2,*** and ***special permit inspection areas.***

20. **Certification**: A NEXUS senior executive officer, vice president or higher must certify in writing the following:

a. NEXUS pipeline ***special permit segment 1, special permit segment 2,*** and ***the special permit inspection area*** meet the conditions described in this special permit;

b. The written manual of O&M procedures required by 49 CFR 192.605 for the NEXUS pipeline has been updated to include all requirements of this special permit; and

c. NEXUS has implemented all Conditions as required by this special permit.

NEXUS must send the certifications required in Condition D.20.a through c with special permit condition status and procedure completion date, compliance documentation summary, and the required senior executive signature and date of signature to the PHMSA Associate Administrator with copies to the Deputy Associate Administrator, PHMSA Field Operations; Deputy Associate Administrator, PHMSA Policy and Programs; PHMSA

Central and Eastern Region Director; Director, PHMSA Standards and Rulemaking Division; Director, PHMSA Engineering and Research Division[48]; and to the Federal Register Docket PHMSA-2016-0009, at www.Regulations.gov a minimum of 14 days prior to placing the pipeline in-service. All procedures required in the special permit conditions must be completed by NEXUS a minimum of 14 days prior to the pipeline in-service date and implemented based upon the timing in the special permit conditions. A finalized certification for Condition D.20 a through c must be sent, one (1) year not to exceed 13 months after the pipeline in-service date, to the above listed PHMSA contacts.

21. **Certification – Formal Review**: A NEXUS senior executive officer, vice president or higher must schedule and conduct a formal status review of the special permit conditions with the PHMSA Administrator and Associate Administrator:

    a. prior to placing the NEXUS Pipeline in-service; and

    b. One (1) year not to exceed 13 months after the NEXUS Pipeline in-service date.

III. Limitations:

PHMSA issues this special permit subject to the following limitations:

1) PHMSA has the sole authority to make all determinations on whether NEXUS has complied with the specified conditions of this special permit.

2) Failure to submit the certifications required by Condition D.20 within the time frames specified may result in revocation of this special permit.

3) PHMSA may revoke, suspend or modify a special permit based on any finding listed in 49 CFR 190.341(h)(1) and require NEXUS to comply with the regulatory requirements in 49

[48] NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

CFR 192.625. As provided in 49 U.S.C. Chapter 601 and 49 CFR Part 190, PHMSA may also issue an enforcement action for failure to comply with this special permit. Any work plans and associated schedules must be automatically incorporated into this special permit and are enforceable in the same manner.

4) Should PHMSA revoke, suspend, or modify a special permit based on any finding listed in 49 CFR 190.341(h)(1), PHMSA will notify NEXUS in writing of the proposed action and provide NEXUS an opportunity to show cause why the action should not be taken. In accordance with 49 CFR 190.341(h)(2)(i), NEXUS may provide a written response showing why the proposed action should not be taken within 30 days of the notice. However, if necessary to avoid the risk of significant harm to persons, property, or the environment, PHMSA will declare the proposed action (revocation, suspension, or modification) immediately effective, in accordance with 49 CFR 190.341(h)(3).

5) The terms and conditions of any corrective action order, compliance order or other order applicable to a pipeline facility covered by this special permit will take precedence over the terms of this special permit in accordance with 49 CFR 190.341(h)(4).

6) NEXUS may seek reconsideration of a decision made pursuant to 49 CFR 190.341(h) by submitting a petition to the Associate Administrator of Pipeline Safety, in accordance with 49 CFR 190.341(i). The Associate Administrator's decision made pursuant to 49 CFR 190.341(i) constitutes final administrative action. All final administrative actions are subject to judicial review under 49 U.S.C. § 60119.

7) If NEXUS sells, merges, transfers, or otherwise disposes of the assets known as the ***special permit segments*** or the ***special permit inspection area***, NEXUS must provide PHMSA with written notice of the change within 30 days of the consummation date. In the event of such transfer, PHMSA reserves the right to revoke, suspend, or modify the special permit if the transfer constitutes a material change in conditions or circumstances pursuant to 49 CFR 190.341(h)(1)(ii) or any other circumstances listed under 49 CFR 190.341(h)(1).

8) PHMSA grants this special permit to limit it to a term of no more than ten (10) years from the issuance date. If NEXUS elects to seek renewal of this special permit, NEXUS must

submit its renewal request at least 180 days prior to expiration of the ten (10) year period to the PHMSA Associate Administrator with copies to the Deputy Associate Administrator, PHMSA Field Operations; Deputy Associate Administrator, PHMSA Policy and Programs; PHMSA Central and Eastern Region Directors; Director, PHMSA Standards and Rulemaking Division; and Director, PHMSA Engineering and Research Division.[49] All requests for a special permit renewal must include a summary report in accordance with the requirements in Condition 13 (Annual Report) above and must demonstrate that the special permit is still consistent with pipeline safety. PHMSA may seek additional information from NEXUS prior to granting any request for special permit renewal.

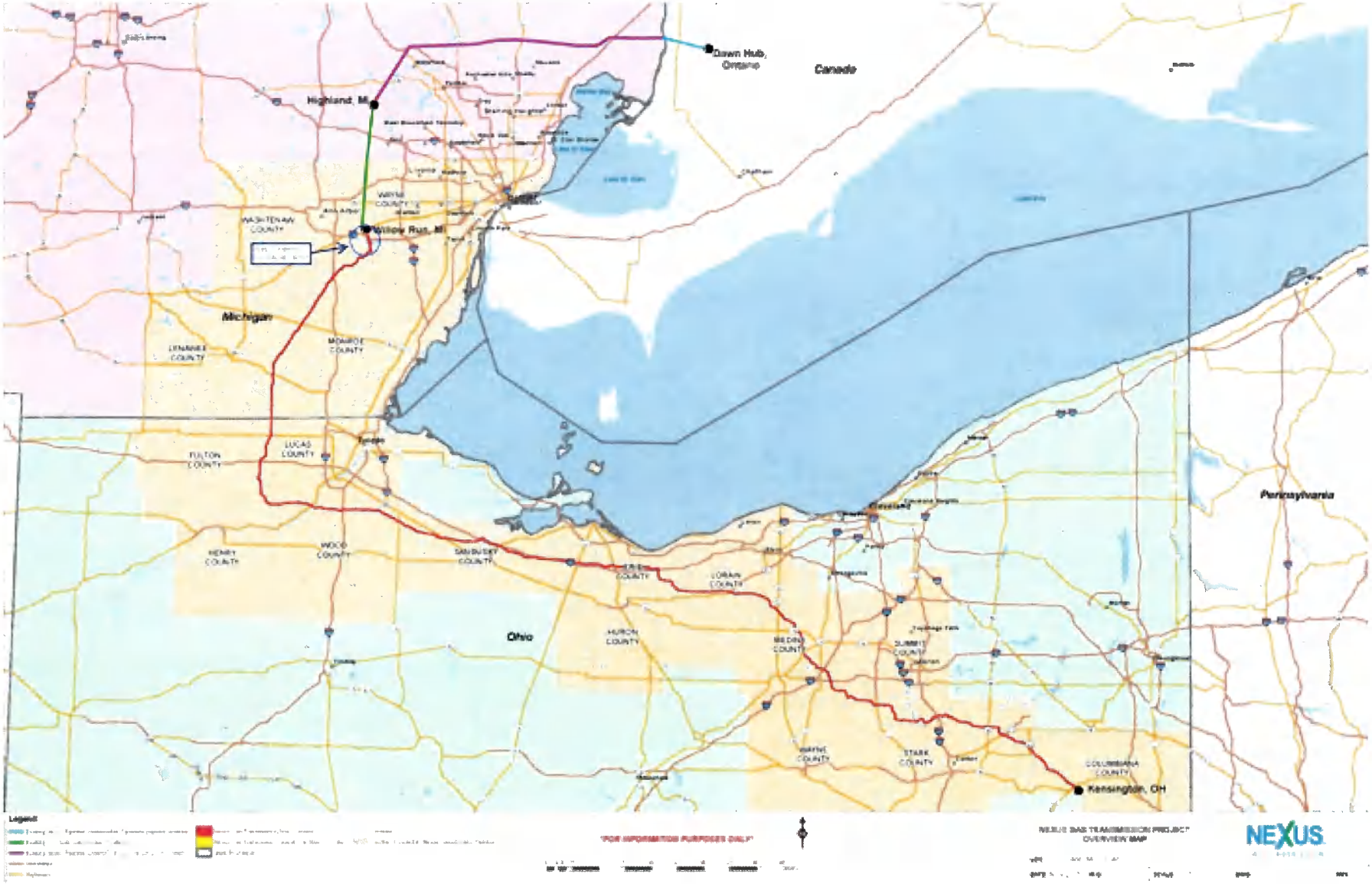
AUTHORITY: 49 U.S.C. 60118 (c)(1) and 49 CFR 1.97.

Issued in Washington, DC on JUN 29 2018.

Alan K. Mayberry,
Associate Administrator for Pipeline Safety

[49] NEXUS must also send a copy to the PHMSA Director of State Programs and the appropriate state authorities including the Michigan Public Service Commission, Manager of Gas Operations, or the Public Utility Commission of Ohio, Service Monitoring and Enforcement Department, Gas Pipeline Safety Program Manager, which are the authorities of the states along the NEXUS pipeline route that have interstate agent agreements with PHMSA.

Attachment A: NEXUS Pipeline – Overview Map



Appendix B

NEXUS Project Class Location with Design Factor

(See next three pages)

STATIONING BEGIN	STATIONING END	MILE POST BEGIN	MILE POST END	CLASS LOCATION	DESIGN FACTOR	
0+00	5+15	0.0	0.1	Class 1	0.72	
5+15	11+64	0.1	0.2	Class 2	0.6	
11+64	27+16	0.2	0.5	Class 3	0.5	
27+16	183+46	0.5	3.5	Class 2	0.6	
183+46	244+42	3.5	4.6	Class 1	0.72	
244+42	431+95	4.6	8.2	Class 2	0.6	
431+95	513+38	8.2	9.7	Class 1	0.72	
513+38	782+73	9.7	14.8	Class 2	0.6	
782+73	930+77	14.8	17.6	Class 1	0.72	
930+77	1033+37	17.6	19.6	Class 2	0.6	
1033+37	1109+73	19.6	21.0	Class 1	0.72	
1109+73	1182+04	21.0	22.4	Class 2	0.6	
1182+04	1383+97	22.4	26.2	Class 1	0.72	
1383+97	1443+95	26.2	27.3	Class 2	0.6	
1443+95	1536+61	27.3	29.1	Class 1	0.72	
1536+61	1659+16	29.1	31.4	Class 2	0.6	
1659+16	1668+83	31.4	31.6	Class 1	0.72	
1668+83	1807+61	31.6	34.2	Class 3	0.5	
1807+61	1917+05	34.2	36.3	Class 2	0.6	
1917+05	1983+66	36.3	37.6	Class 3	0.5	
1983+66	2246+73	37.6	42.6	Class 2	0.6	
2246+73	2317+38	42.6	43.9	Class 3	0.5	
2317+38	2507+39	43.9	47.5	Class 2	0.6	
2507+39	2571+39	47.5	48.7	Class 1	0.72	
2571+39	2676+99	48.7	50.7	Class 3	0.5	
2676+99	2690+76	50.7	51.0	Class 1	0.72	
2690+76	2762+49	51.0	52.3	Class 2	0.6	

STATIONING BEGIN	STATIONING END	MILE POST BEGIN	MILE POST END	CLASS LOCATION	DESIGN FACTOR	
2762+49	2773+61	52.3	52.5	Class 1	0.6[50]	
2773+61	2891+95	52.5	54.8	Class 3	0.5	
2891+95	3031+74	54.8	57.4	Class 2	0.6	
3031+74	3041+77	57.4	57.6	Class 3	0.5	
3041+77	3103+17	57.6	58.8	Class 2	0.6	
3103+17	3131+40	58.8	59.3	Class 1	0.72	
3131+40	3197+35	59.3	60.6	Class 2	0.6	
3197+35	3525+52	60.6	66.8	Class 1	0.72	
3525+52	3545+55	66.8	67.2	Class 2	0.6	
3545+55	3558+22	67.2	67.4	Class 3	0.5	
3558+22	3565+45	67.4	67.5	Class 3	0.5	
3565+45	3594+11	67.5	68.1	Class 2	0.6	
3594+11	3628+85	68.1	68.7	Class 1	0.72	
3628+85	3949+35	68.7	74.8	Class 2	0.6	
3949+35	4025+09	74.8	76.2	Class 1	0.72	
4025+09	4103+47	76.2	77.7	Class 2	0.6	
4103+47	4149+82	77.7	78.6	Class 1	0.72	
4149+82	4218+27	78.6	79.9	Class 2	0.6	
4218+27	4373+72	79.9	82.8	Class 1	0.72	
4373+72	4444+68	82.8	84.2	Class 2	0.6	
4444+68	4967+73	84.2	94.1	Class 1	0.72	
4967+73	4976+09	94.1	94.2	Class 3	0.5	
4976+09	4988+42	94.2	94.5	Class 2	0.6	
4988+42	5078+68	94.5	96.2	Class 3	0.5	
5078+68	5230+39	96.2	99.1	Class 1	0.72	
5230+39	5404+56	99.1	102.4	Class 2	0.6	
5404+56	5905+86	102.4	111.9	Class 1	0.72	

[50] A 0.6 design factor is being utilized at this location to facilitate hydrostatic testing.

STATIONING BEGIN	STATIONING END	MILE POST BEGIN	MILE POST END	CLASS LOCATION	DESIGN FACTOR	
5905+86	5975+28	111.9	113.2	Class 2	0.6	
5975+28	6196+18	113.2	117.4	Class 1	0.72	
6196+18	6252+99	117.4	118.4	Class 2	0.6	
6252+99	6677+84	118.4	126.5	Class 1	0.72	
6677+84	6833+20	126.5	129.4	Class 2	0.6	
6833+20	6887+27	129.4	130.4	Class 1	0.72	
6887+27	6997+71	130.4	132.5	Class 2	0.6	
6997+71	7746+05	132.5	146.7	Class 1	0.72	
7746+05	7796+56	146.7	147.7	Class 2	0.6	
7796+56	7825+80	147.7	148.2	Class 1	0.72	
7825+80	7891+85	148.2	149.5	Class 2	0.6	
7891+85	8161+75	149.5	154.6	Class 1	0.72	
8161+75	8172+47	154.6	154.8	Class 2	0.6	
8172+47	8239+34	154.8	156.0	Class 3	0.5	
8239+34	8361+26	156.0	158.4	Class 1	0.72	
8361+26	8414+83	158.4	159.4	Class 2	0.6	
8414+83	8646+19	159.4	163.8	Class 1	0.72	
8646+19	8757+16	163.8	165.9	Class 2	0.6	
8757+16	8766+11	165.9	166.0	Class 3	0.5	
8766+11	8780+34	166.0	166.3	Class 2	0.6	
8780+34	9180+46	166.3	173.9	Class 1	0.72	
9180+46	9247+06	173.9	175.1	Class 2	0.6	
9247+06	9645+28	175.1	182.7	Class 1	0.72	
9645+28	9658+48	182.7	182.9	Class 3	0.5	
9658+48	9939+83	182.9	188.3	Class 1	0.72	
9939+83	10011+88	188.3	189.6	Class 3	0.5	
10011+88	10012+37	189.6	189.6	Class 1	0.72	
10012+37	10106+59	189.6	191.4	Class 2	0.6	
10106+59	10225+71	191.4	193.7	Class 1	0.72	

STATIONING BEGIN	STATIONING END	MILE POST BEGIN	MILE POST END	CLASS LOCATION	DESIGN FACTOR	
10225+71	10296+65	193.7	195.0	Class 2	0.6	
10296+65	10331+30	195.0	195.7	Class 1	0.72	
10331+30	10426+31	195.7	197.5	Class 2	0.6	
10426+31	10830+50	197.5	205.1	Class 1	0.72	
10830+50	10885+26	205.1	206.2	Class 2	0.6	
10885+26	12920+33	206.2	244.7	Class 1	0.72	
12920+33	12944+46	244.7	245.1	Class 2	0.6	
			245.16	Class 2	0.5	"Special Permit Segment 1"
12944+46	13002+26	245.1	246.3	Class 2	0.5	
13002+26	13009+27	246.3	246.4	Class 3	0.5	
13009+27	13026+91	246.4	246.7	Class 2	0.5	
13026+91	13108+94	246.7	248.3	Class 1	0.5	
13108+94	13132+31	248.3	248.7	Class 2	0.5	
13132+31	13209+59	248.7	250.2	Class 3	0.5	
13209+59	13235+21	250.2	250.7	Class 2	0.5	
13235+21	13257+12	250.7	251.1	Class 3	0.5	
13257+12	13258+85	251.1	251.1	Class 2	0.5	
13258+85	13274+04	251.1	251.4	Class 3	0.5	
13274+04	13277+68	251.4	251.5	Class 2	0.5	
13277+68	13300+42	251.5	251.9	Class 1	0.5	
13300+42	13434+05	251.9	254.4	Class 3	0.5	
13434+05	13454+38	254.4	254.8	Class 1	0.5	
13454+38	13466+20	254.8	255.0	Class 3	0.5	
13466+20	13484+12	255.0	255.4	Class 1	0.5	
13484+12	13508+66	255.4	255.8	Class 2	0.5	
13508+66	13518+33	255.8	256.0	Class 3	0.5	
13518+33	13521+69	256.0	256.1	Class 2	0.5	

Appendix C

NEXUS Pipeline - Mainline Valves by Milepost (MP)

Name	MP	Stationing	County	State
Kensington Metering Station MR02 Valve	0.0	0+00	Columbiana	Ohio
Kensington Metering Station MR03 Valve	0.0	0+00	Columbiana	Ohio
Hanoverton Compressor Station Valve	1.4	72+13	Columbiana	Ohio
Main Line Valve (MLV) 01	16.7	881+31	Stark	Ohio
MLV02	32.6	1720+06	Stark	Ohio
MLV03	40.1	2116+12	Summit	Ohio
MLV04	50.5	2666+78	Wayne	Ohio
MLV05	58.1	3069+94	Medina	Ohio
Wadsworth Compressor Station Valve	63.6	3355+97	Medina	Ohio
MLV06	74.6	3938+67	Medina	Ohio
MLV07	89.9	4745+41	Lorain	Ohio
MLV08	97.5	5147+50	Lorain	Ohio
MLV09	117.2	6187+87	Erie	Ohio
MLV10	125.7	6636+48	Erie	Ohio
Clyde Compressor Station Valve	134.9	7122+14	Sandusky	Ohio
MLV11	152.8	8067+25	Sandusky	Ohio
MLV12	168.8	8914+50	Wood	Ohio
Waterville Compressor Station Valve	184.6	9744+57	Lucas	Ohio
MLV13	190.3	10047+32	Lucas	Ohio
MLV14	210.0	11087+20	Lenawee	Michigan
MLV15	229.2	12101+73	Lenawee	Michigan
MLV16	248.5	13120+13	Washtenaw	Michigan
Willow Run Metering Station MR04 Valve	256.1	13521+69	Washtenaw	Michigan