Postgraduate Certificate in Pipeline Integrity Management

Integrity Management Plans and Procedures

Aboveground Installation (AGI)

Related terms: pipeline, belowground installation

An aboveground installation (AGI) is any pipeline facility that is above the ground, such as valves, compressor stations, and metering stations. AGIs are important for monitoring and controlling the pipeline system. They are often used in areas where it is not possible or practical to bury the pipeline, such as in mountainous or rocky terrain, or in urban areas.

AC Mitigation

Related terms: alternating current, direct current, corrosion

AC mitigation is the process of reducing or eliminating the effects of alternating current (AC) on pipelines. AC can cause corrosion on pipelines, which can lead to leaks and failures. AC mitigation methods include the use of coatings, cathodic protection, and insulation.

Anomaly

Related terms: pipeline, integrity management, threat, defect

An anomaly is a deviation from the normal or expected condition of a pipeline. Anomalies can be caused by a variety of factors, including corrosion, manufacturing defects, and external damage. Anomalies can pose a threat to the integrity of a pipeline, and therefore must be identified and managed through an integrity management plan.

Assessment

Related terms: integrity management, risk, threat, defect

Assessment is the process of evaluating the condition of a pipeline and identifying any threats or defects that could pose a risk to its integrity. Assessments can be performed using a variety of methods, including internal inspections, external inspections, and data analysis. The results of assessments are used to develop and implement an integrity management plan.

As-Built Drawings

Related terms: pipeline, construction, design

As-built drawings are detailed drawings that show the final construction of a pipeline, including any changes that were made during construction. As-built drawings are used to verify that the pipeline was built in accordance with the design and construction plans, and to provide a record of the pipeline's construction

for future reference.

Belowground Installation (BGI)

Related terms: pipeline, aboveground installation

A belowground installation (BGI) is any pipeline facility that is below the ground, such as the pipeline itself, as well as appurtenances such as valves and fittings.BGIs are typically used in areas where it is possible and practical to bury the pipeline, such as in rural or undeveloped areas.

Cathodic Protection

Related terms: corrosion, alternating current, direct current

Cathodic protection is a method of protecting pipelines from corrosion by applying a direct current (DC) to the pipeline. The DC creates a barrier between the pipeline and the soil, preventing corrosion from occurring. Cathodic protection is an effective method of protecting pipelines from corrosion, but it must be properly designed, installed, and maintained to be effective.

Coating

Related terms: pipeline, corrosion, cathodic protection

Coating is a material that is applied to the exterior of a pipeline to protect it from corrosion. Coatings can be made of a variety of materials, including paint, plastic, and metal. Coatings are an important part of a pipeline's corrosion protection system, and they must be properly designed, installed, and maintained to be effective.

Corrosion

Related terms: pipeline, cathodic protection, coating, alternating current

Corrosion is the deterioration of a pipeline due to chemical reactions between the pipeline and its environment. Corrosion can be caused by a variety of factors, including moisture, oxygen, and chemicals in the soil. Corrosion can lead to leaks and failures in pipelines, and therefore must be managed through the use of coatings, cathodic protection, and other corrosion control methods.

Data Analysis

Related terms: integrity management, assessment, threat, defect

Data analysis is the process of examining and interpreting data to identify trends, patterns, and other useful information. In the context of pipeline integrity management, data analysis is used to assess the condition of a pipeline and identify any threats or defects that could pose a risk to its integrity. Data analysis can be performed using a variety of methods, including statistical analysis, machine learning, and artificial intelligence.

Defect

Related terms: pipeline, integrity management, threat, assessment

A defect is a flaw or imperfection in a pipeline that could pose a risk to its integrity. Defects can be caused by a variety of factors, including corrosion, manufacturing defects, and external damage. Defects must be identified and managed through an integrity management plan to prevent leaks and failures in the pipeline.

Design

Related terms: pipeline, construction, as-built drawings

Design is the process of creating detailed plans and specifications for the construction of a pipeline. The design process includes selecting the pipeline route, determining the pipeline size and material, and specifying the construction methods and materials. The design must be carefully planned and executed to ensure that the pipeline is safe, reliable, and cost-effective.

Direct Current (DC)

Related terms: cathodic protection, alternating current

Direct current (DC) is a type of electrical current that flows in one direction only. DC is used in cathodic protection systems to protect pipelines from corrosion. DC creates a barrier between the pipeline and the soil, preventing corrosion from occurring.

External Corrosion

Related terms: pipeline, corrosion, coating, cathodic protection

External corrosion is the deterioration of a pipeline due to chemical reactions between the pipeline and its environment. External corrosion can be caused by moisture, oxygen, and chemicals in the soil. External corrosion can lead to leaks and failures in pipelines, and therefore must be managed through the use of coatings, cathodic protection, and other corrosion control methods.

External Inspection

Related terms: integrity management, assessment, threat, defect

An external inspection is a visual examination of the outside of a pipeline to identify any threats or defects that could pose a risk to its integrity. External inspections can be performed using a variety of methods, including foot patrols, vehicle patrols, and aerial patrols. External inspections are an important part of a pipeline's integrity management plan.

Integrity Management Plan (IMP)

Related terms: pipeline, risk, assessment, threat, defect

An integrity management plan (IMP) is a comprehensive plan for managing the integrity of a pipeline. The

IMP includes a risk assessment, which identifies the threats and defects that could pose a risk to the pipeline's integrity. The IMP also includes a plan for addressing these threats and defects, which may include repairs, replacements, or other mitigation measures.

Internal Corrosion

Related terms: pipeline, corrosion, cathodic protection, coating

Internal corrosion is the deterioration of a pipeline due to chemical reactions between the pipeline and the material it is transporting. Internal corrosion can be caused by moisture, oxygen, and chemicals in the transported material. Internal corrosion can lead to leaks and failures in pipelines, and therefore must be managed through the use of coatings, cathodic protection, and other corrosion control methods.

Internal Inspection

Related terms: integrity management, assessment, threat, defect

An internal inspection is a visual examination of the inside of a pipeline to identify any threats or defects that could pose a risk to its integrity. Internal inspections can be performed using a variety of methods, including smart pigs, inline inspection tools, and internal visual examinations. Internal inspections are an important part of a pipeline's integrity management plan.

Leak

Related terms: pipeline, integrity management, threat, defect

A leak is an unintended release of material from a pipeline. Leaks can be caused by a variety of factors, including corrosion, manufacturing defects, and external damage. Leaks can pose a risk to the environment, public safety, and the pipeline's integrity, and therefore must be identified and managed through an integrity management plan.

Machine Learning

Related terms: data analysis, artificial intelligence, integrity management

Machine learning is a type of artificial intelligence that allows computers to learn and improve their performance on a task without being explicitly programmed. In the context of pipeline integrity management, machine learning can be used to analyze data and identify trends, patterns, and other useful information.

Manufacturing Defect

Related terms: pipeline, defect, integrity management

A manufacturing defect is a flaw or imperfection in a pipeline that was introduced during the manufacturing process. Manufacturing defects can pose a risk to the pipeline's integrity, and therefore must be identified and managed through