



# Health, Safety and Environment

Program Overview

**HALLIBURTON**



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 Health, Safety and Environment  
 Program Overview

Owner: Global Health, Safety  
 and Environment

Approver: VP, HSE and SQ

Revision: A, 6-June-2017

Summary of Key Revisions

Initial Release (21-Aug-2015)

Revision: A, 6-June-2017



# Introduction

“No business objective will be pursued at the expense of safety.”

**Jeffrey A. Miller**  
President and Chief Executive Officer

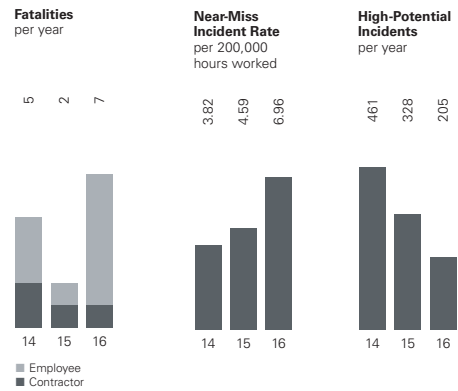
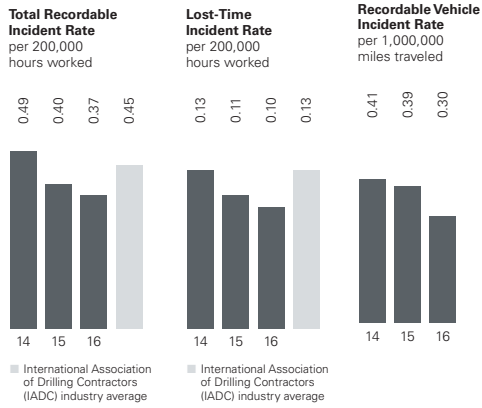
Ensuring that Halliburton operations do not have an adverse effect on health, safety or the environment is fundamental to our business strategy, and is a core value for Halliburton. In recent years, we have made great strides in performance across these areas. The drivers of this progress have been the commitment of our leadership, a robust management system, and the competencies and commitment of our people — all core elements of our Journey to ZERO.

In managing health, safety and environmental (HSE) issues, we use methods such as focusing on leading indicators, competency-based training, open communication and rigorous auditing. We also adhere to the comprehensive work processes found in the Halliburton Management System (HMS), which incorporate embedded risk-management controls. HSE procedures are based on regulatory requirements and industry best practices, and have control points to ensure that each stage of an operation is fully compliant.

Our HSE performance has continued to improve, showing further gains on our strong performance in 2015. Similar progress has occurred in service quality, where we have achieved significant gains even as we work on increasingly complex and demanding projects.

HSE achievements in 2016 include:

- Halliburton achieved a fifth consecutive year of improvement in health and safety incident rates in 2016.
- We built on our best-ever performance in 2015 to reduce our 2016 total recordable incident rate (TRIR) by a further 7.5 percent to 0.37 incidents per 200,000 hours worked. This compares to the International Association of Drilling Contractors 2016 industry average of 0.45.
- The company reduced the severity of incidents that do occur. This is reflected in our lost-time incident rate (LTIR), which is 9 percent lower than in 2015 — a historical best.
- We maintained the low frequency of environmental incidents of all types in our operations, achieving a recordable environmental incident rate (REIR) of 0.04 incidents per 200,000 hours worked in 2016.
- Halliburton reduced the overall impact of environmental incidents with total spill volumes down by 78 percent in 2016 compared to 2015.
- We reduced our carbon footprint for 2016 to 2.06 million metric tons, which equates to emissions of 130 metric tons per million dollars of revenue, a reduction of 17 percent from 2015.





## HSE & SQ Strategy

HSE management and service quality (SQ) are fundamental to Halliburton operations. Our ability to collaborate with our customers and engineer solutions to maximize the value of their assets is based on industry-leading performance in each of these areas.

To ensure alignment of HSE and SQ with the Company's overarching strategy, Journey to ZERO weaves together the Halliburton values of safety and reliability with continuous improvement, to empower employees to realize excellence in every aspect of their work.



### 2.1 Journey to ZERO

Journey to ZERO is Halliburton's vision to achieve zero safety incidents, zero environmental incidents, and zero nonproductive time. This vision encompasses our commitment to our employees, our customers and our communities, and expresses our priorities – to set the highest standards, embrace the challenge, and make no compromises in executing our work.

At Halliburton, we view the actions driving success in HSE and SQ as complementary. We believe that this insight and our Journey to ZERO vision align our efforts and those of our stakeholders in a concerted endeavor to realize the goal of ZERO.

We have defined six elements that provide a roadmap for achievement. While specific focus areas evolve annually, these elements remain consistent each year:

- Leadership commitment
- HMS continuous improvement
- Training and competency
- Communicate and address risks
- Technology and process improvement
- Performance verification

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From the CEO to the newest hire, we work to make every job safer, more efficient and more effective than the one before.

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We have established an environment of open communication for risk mitigation by providing employees a way to report and address risk.

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## 2.2 Leadership Commitment

Our Journey to ZERO is owned by all our people, and is led by a senior-level team focused on improving individual safety, process safety and environmental performance in the delivery of all our services.

Reporting to the vice president of HSE/SQ in the Global HSE group are directors and managers focusing on:

- HSE standards and programs
- HSE and Service Quality performance
- Chemical stewardship
- Environmental compliance

For each product service line (PSL) and region, a HSE manager has responsibility for compliance and performance improvement. Within each organization are hundreds of HSE professionals across the globe. While every leader and employee owns safety and has a crucial role in taking us to ZERO, our HSE leadership team is a powerful force in informing and motivating the Halliburton workforce.

## 2.3 HMS Continuous Improvement

The Halliburton Management System (HMS) is how we work and is central to putting our Journey to ZERO into action. HMS defines our work, by providing reliable processes that equip employees to work safely, consistently and effectively. The standards, processes, guidelines and work methods that make up HMS enable us to address the risks that are inherent in our business. A key element of the system is control points, which are defined requirements or activities in the job plan that provide confidence that the job purpose will be achieved.

HMS incorporates major management system standards, including those for quality management (ISO 9001), environmental management (ISO 14001), and health and safety management (OHSAS 18001). The system also meets and exceeds the requirements of the industry-specific American Petroleum Institute (API) standards for manufacturing and service quality (API Q1 and API Q2), and the API RP 75 standard for offshore safety and environmental management.

## 2.4 Training and Competency

To ensure a superior global workforce, we have developed a detailed competency program that is closely aligned with HMS and includes many HSE-related requirements. Our competency systems first received global certification from the International Association of Drilling Contractors in 2013, and this has been reconfirmed each year since, including in 2016. Halliburton is the only full-spectrum service company with a globally certified competency program with no restrictions.

## 2.5 Communicate and Address Risks

We have established an environment of open communication for risk mitigation by providing employees a way to report and address risk. Our global Stop Work Authority (SWA) program plays a key role in preventing incidents. All employees and contractors have the authority — and, more importantly, the responsibility — to stop a task if they observe an unsafe action or condition at a worksite, or if they have a concern regarding the control of an HSE risk. The program also promotes and recognizes proactive participation in our safety culture. Incidences of SWA are tracked in the HSE incident reporting system and reported monthly to the Executive Committee.

Design of Service (DOS) is another key component within HMS. DOS provides a complete operations plan, establishing and documenting metrics, reviews and management of change (MOC) processes for the job. DOS includes risk assessment and pre-job planning, and enables employees to work safely, consistently and effectively.

## 2.6 Technology and Process Improvement

A major way that we engineer out risk is by focusing on product and service design. Our Technology organization designs equipment by using the LIFECYCLE stage-gate process, which includes HSE reviews at critical junctures during the design and development of a new technology. Our Manufacturing organization builds the products safely, outperforming the industry average, and our products are designed to have best-in-class safety performance while in use.

Engineering out risks includes attention to the hazards and environmental impact of chemicals used. The Halliburton Chemistry Scoring index (CSI) ranks and compares the relative risks associated with the chemical products used in oil and gas operations.

Using the CSI, our customers can compare chemicals within the same product class, enabling them to choose products that fit their needs while posing the least potential risk. The CSI is aligned with the hazard determination principles of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals, and with other regulatory standards.

## 2.7 Performance Verification

Regions conduct monthly HSE and SQ inspections at each facility, rigsite and wellsite. These monthly inspections are based on a standard question set. The questions rotate each month to include full coverage of issues throughout the year. Question sets include PSL- and location-specific questions to ensure that all relevant operational factors are addressed. Location managers must participate in at least one monthly inspection per quarter.




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Halliburton employees carried out 2,805 Stop Work Authority interventions in 2016.

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Internal Assurance Services provides assurance and insight on the management system of control with responsibility for audits of financial controls, corporate, SQ and HSE. The independent internal audit is a critical part of our governance of HSE and SQ. A risk-based approach is used to develop the audit plan and define audit scope. Audit outcomes are finalized in a formal report, and actions are required to address reported audit observations. Audit findings, trends, insights and corrective measures are reported within the organization and to board committees, as applicable.

## Operational HSE



### 3.1 Personal Safety – Halliburton Life Rules

The Halliburton Life Rules are 10 key factors that affect employee safety. Based on our HSE standards, they are a tool to communicate critical requirements to our employees. The Halliburton Life Rules are used in all our businesses and operations. They apply to every employee and every contractor, in every region and operation.

### 3.2 Process Safety – Critical Focus Areas

Critical Focus Areas are aspects of Halliburton operations with the greatest inherent risk for HSE, process safety and service quality events. When conducting operations involving any of these areas, process adherence and attention to the task are imperative.

The Critical Focus Areas are:

- **Barriers** – The physical measures (such as packers, plugs, blowout preventers, surface valves, drilling fluids or cement) that prevent gas or oil from flowing into the well from the formation and traveling to the surface
- **Hydrocarbons to the Surface** – the flow of gas or oil to the surface, such as in well testing or well cleanup operations
- **Trapped Pressure** – Equipment in which a release of pressure could occur (such as discharge iron, lab machinery, blowout preventers, cement heads, swages, wellhead pressure control equipment, pipelines, hoses, tanks or silos)
- **Well Proximity** – The potential for collision with a producing or existing wellbore while drilling
- **Radiation and Explosives** – Any surface activities concerning a radioactive source or explosive material



### 3.3 Driving Safety

Driving is the largest single risk for Halliburton. We address this risk through our ongoing Journey Management and in-vehicle monitoring system initiatives, and through our global culture of land transportation safety based on sharing valuable information and best practices across the Company. Our Journey Management program focuses on risk management, requiring drivers to log journeys and assess them according to predefined risk factors. It also provides management oversight of journey planning, execution and closure. Another key focus area is driver competencies to ensure that our drivers have the training and education to recognize and manage driving risks. These measures have enabled us to further improve driving safety performance, with vehicle incident rates 23 percent lower in 2016 than in 2015. We continue with initiatives to improve our performance, including:

- Global Community of Practice for land transport safety
- Training and competency requirements for all drivers of Company vehicles
- In-vehicle monitoring systems that record and manage data on driver performance, and are critical control elements in our land transportation activities.

### 3.4 Subcontractor Oversight

Halliburton requires contractors to meet or exceed our HSE standards and to comply with all applicable laws and relevant industry standards. We communicate our “20 Rules of Contractor Responsibilities” to all contractors to ensure their focus on key areas, from incident reporting to the use of personal protective equipment. Audits and evaluations help ensure that subcontractors’ programs and practices are consistent with our HSE policies and standards.

### 3.5 Risk Assessment and Pre-Job Planning

We conduct pre-job reviews of customer policies and contractual obligations to ensure that Halliburton practices are aligned with customers’ HSE programs and expectations, and with local regulations.

Risk assessment is a critical part of pre-job planning. Numerous risks have been defined and included in the HMS, along with mitigation procedures. However, job-specific or unusual risks are also considered before every job. The foundation of day-to-day risk management lies in our integration of both service quality requirements and HSE considerations into HMS.

### 3.6 Incident Investigation and Cause Analysis

Rigorous investigation of incidents is a crucial component of our improved HSE performance. We also track near misses, which are incidents where






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Our SIR process brings immediate visibility to high-risk incidents, and enables timely and rigorous assessment to determine root cause.

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the potential for personal injury, property damage or adverse environmental impact was present, even though none occurred. We classify a near miss as a high-potential incident if the conditions could have resulted in serious personal injury, property damage or adverse environmental impact.

Investigation of significant incidents through our Significant Incident Review (SIR) process brings immediate visibility to high-risk incidents, and enables timely and rigorous assessment to determine root cause. Investigations are reviewed by appropriate Executive and Board committees. This process ensures that the most serious incidents are fully understood and that effective preventive measures can be taken efficiently.

### 3.7 Industry Standards Compliance

Halliburton has numerous locations across the globe certified to ISO 9001, ISO 14001 and OHSAS 18001. Our manufacturing centers are certified to API Q1. We also lead the industry in API Q2 certification, and in 2016, operations in Azerbaijan and Nigeria received certification, bringing the total number of API Q2-certified facilities to 38, located in nine countries.

In addition, HMS incorporates major management system standards, including ISO 9001, ISO 14001 and OHSAS 18001. The system also meets and exceeds the requirements of the industry-specific API Q1 and API Q2, and the API RP 75 standard for offshore safety and environmental management.

## Environmental Sustainability

### 4.1 Environmental Performance

Halliburton continues to reduce the overall impact of environmental incidents. In 2016, we maintained the low frequency of environmental incidents of all types in our operations, achieving a recordable environmental incident rate (REIR) of 0.04 incidents per 200,000 hours worked.

The total volume of spills decreased by 78 percent in 2016, primarily as a result of improvements in the control environment and in process adherence. We remain committed to continual improvement in environmental compliance and in the reduction of our environmental footprint.




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Sustainability is integral to our overall mission as we seek to deliver long-term financial value while minimizing our environmental footprint and making a positive impact on society.

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#### 4.2 Air Emissions and Greenhouse Gases

Halliburton is committed to continual improvement in air emissions from our activities, and to reducing greenhouse gas emissions across our value chain. We achieve this by working to reduce the environmental footprint of the equipment we use, of our corporate real estate, and of the products and services we offer.

One element in this effort has been our leadership in the deployment of diesel engines that meet the U.S. Environmental Protection Agency (EPA) Tier 4 standard. The Tier 4 standard sets stringent requirements for non road diesel engines to lower emissions of particulates, nitrogen compounds and other pollutants by as much as 90 percent. We are unique in the oilfield services sector in designing and manufacturing our own equipment that uses these engines, working with engine manufacturers and making significant investments in research and development to reduce emissions. Today, the Company's surface equipment is among the cleanest available and it comprises the largest fleet of Tier 4-compliant diesel engines in operation in the U.S. and the Gulf of Mexico.

We have continued to improve the environmental performance of our global real estate. Several key sites have achieved certification for Leadership in Energy and Environmental Design (LEED) and similar awards, notably our main Houston location, known as the North Belt campus.

In 2016, our global greenhouse gas emissions decreased to approximately 2.06 million metric tons, a reduction of 44 percent from our emissions for 2015.

The year-on-year decrease is primarily due to reduced overall activity levels in the year and to changes in the activity mix in terms of PSLs and geographies. However, we have also increased operational efficiency through improvements in real estate and operating assets, and through process efficiency. These include continued rollout of the Frac of the Future™ technology suite, notably in wider use of Q10™ pumps, and ongoing commitment to our surface efficiency strategy. Greater efficiency is reflected in our lower emissions intensity in 2016, with emissions per million dollars of revenue down by 17 percent to 130 metric tons.

#### 4.3 Sustainability

Sustainability is integral to our overall mission as we seek to deliver long-term financial value while minimizing our environmental footprint and making a positive impact on society. Our Guiding Principles for Sustainability are tightly interlinked with our mission, vision and values. They provide the framework to embed sustainability in our actions while achieving our goals.

Central to our sustainability strategy is a value chain approach focused on the material topics for our business. We consider sustainability in our supply chain and in our customers' environmental and social impacts,

## Guiding Principles for Sustainability

Built on a solid foundation of ethics and integrity, the Halliburton Guiding Principles for Sustainability provide the framework for our operations and our future. To ensure that these principles guide every aspect of our decisions, plans and actions, we have matched each with a clearly defined intent.

Principle	Intent
<b>Financial Performance</b> Deliver superior value for our shareholders	To outperform our competitors by delivering superior growth, margins and returns to our shareholders
<b>Health, Safety &amp; Environment</b> Conduct operations that are safe and environmentally responsible	To advance on our Journey to ZERO, toward our vision of zero health, safety, environment or service quality incidents
<b>Technology &amp; Innovation</b> Lead the industry in innovation and conscientious stewardship of global resources	To develop solutions that give our customers economic access to new hydrocarbon resources and maximize the value of their existing assets
<b>Global Citizenship</b> Enhance the economic and social well-being of our employees and the communities in which we operate	To be preferred employer and make a positive impact in the communities where we live and work
<b>Transparency</b> Be transparent in reporting and validating our progress	To provide our stakeholders with thorough and timely information on our progress
<b>Collaboration</b> Engage our stakeholders to help achieve results that are compatible with our stated principles	To actively communicate with key stakeholders to help achieve mutual objectives

alongside our own direct impacts. As a result, our focus is on the areas that are of the greatest significance to our business and to our stakeholders.

For the seventh consecutive year, Halliburton was recognized as an industry leader in corporate sustainability by the 2016 Dow Jones Sustainability Indices (DJSI). We are included in the DJSI North America Index, and we exceeded the industry average in all three DJSI categories: Economic, Environmental and Social Performance.

## Awards and Recognition

Halliburton has been recognized many times for its outstanding HSE achievements. The following are a few examples of our achievements in 2016:

- In 2016, the U.S. Occupational Safety and Health Administration (OSHA) named the Duncan (Oklahoma) Manufacturing Center a “Star Among Stars,” recognizing its exceptional safety performance – rates 50 percent below the U.S. industry average.
- Halliburton won the prestigious 2016 Safety Leadership Award from the Center for Offshore Safety. The annual award recognizes outstanding contributions to the development and sharing of effective safety management practices in the U.S. offshore oil and gas industry. Halliburton won in the contractor category for the implementation of its Dropped Objects Prevention program, which seeks to prevent dropped-object incidents, and to protect people and equipment should any incidences occur.
- In July 2016, the Halliburton Completion Tools Manufacturing production group leader, Eldrick Saw, received the national Workplace Safety and Health (WSH) Gold Award for Supervisors, which is presented annually by the WSH Council of Singapore to honor supervisors who take effective steps toward better safety and health performance in the workplace.
- In Qatar, a major customer honored the crew of the Halliburton 301 marine stimulation vessel for reaching the safety milestone of 16 years of operations without a single lost-time incident.

- The Halliburton Pipeline and Process Services team in China received an award for excellent HSE performance on a project for a major client, achieving more than 200,000 work hours without a lost-time incident.
- The Carbon Disclosure Project in 2016 recognized Halliburton as an industry leader in emissions reduction, naming Halliburton as one of 62 global companies across all industries to have decoupled emissions growth from financial growth.

## HSE Policy and Standards

Our current HSE Policy appears at the end of this overview. Employees are informed about the policy and guiding principles in a variety of ways, including posters, routine safety meetings, new-hire orientations, employee handbooks, and the Halliburton Code of Business Conduct.

Additionally, the more than 80 global HSE standards in our system set minimum expectations for consistent HSE performance globally. All activities are measured against these standards to ensure compliance with Company policy. These standards are underpinned by almost 200 supporting documents and are subject to a rigorous review process on a two-year cycle.



# Halliburton HSE Policy

## Company Policy

### Health, Safety, and Environment

Date Approved: July 15, 2013

Reference No.: 3-10043

#### PURPOSE

This policy establishes the Company's stance concerning the protection of the health and safety of the Company's employees and other persons affected by the Company's business activities and the prevention of environmental pollution with respect to the Company's business activities and operations.

#### SCOPE

This policy applies to Company operations worldwide.

#### POLICY

At Halliburton, Health, Safety, and Environment (HSE) is everyone's responsibility. It is up to every employee to understand and follow applicable laws, as well as the Company's policies, business practices, standards, and procedures.

1. The Company will comply with all applicable laws and relevant industry standards of practice concerning protection of health and safety of its employees in the workplace and other persons affected by its business activities and the prevention of environmental pollution. Protection of health and safety and the prevention of pollution to the environment are Core values of the Company, and the management of the Company will take such actions as are reasonable and necessary to achieve such goals and carry out this policy.
2. We will continuously evaluate the HSE aspects of our products and services. The goal will be to develop and provide products and services that (a) have no undue environmental impact and are safe in their intended use; (b) are efficient in their consumption of energy and natural resources; and (c) can be recycled, reused, or disposed of safely.
3. All Directors and employees of the Company will conduct their duties and responsibilities in a manner that is compatible with achieving these goals and carrying out this policy.
4. The Company believes that effective HSE management is good business. As in other areas of our business, the Company is committed to continual improvement of HSE management practices.
5. The Company will communicate this policy and make it available to its employees, clients, contractors, suppliers, partners, and customers, and with the communities in which it operates, in order to achieve these goals and carry out these policies.

#### Procedure

1. The Chief Executive Officer of the Company will designate a senior officer of the Company as its Chief Health, Safety and Environment Officer (Chief HSE Officer).
2. The Company will establish and maintain self-assessment and audit programs sufficient to provide management of the Company with reports and other information concerning the Company's compliance with this policy.
3. The Chief HSE Officer will oversee the administration of this policy and will make such recommendations as he or she deems appropriate to carry out this policy and achieve its goals. The Chief HSE Officer will report to the HSE Committee of the Board of Directors of the Company at least once each year concerning the Company's HSE compliance and the activities administered by the Chief HSE Officer.

#### For Questions or Assistance

If you have any questions or concerns about how our operations impact human health or the environment, you should speak with your supervisor, or contact an environmental attorney in the Law Department or your local HSE resource.

#### DEFINITIONS

**Company** means Halliburton Company, a Delaware corporation, its successors and subsidiaries and their divisions.

#### REFERENCE

- [Code of Business Conduct](#)

APPROVED BY: Policy Committee

DATE LAST REVIEWED: February 7, 2017

Supersedes POLICY STATEMENT OF: : January 15, 2016. Administrative change only July 2, 2014, and August 1, 2013.

For further assistance: [Halliburton Policies](#)