OHS PLANNING IN MULTI-EMPLOYER PROJECTS

TANAP OVERVIEW

Tolga ARSLAN, H&S Manager

22 April 2019, ANKARA

The Southern Gas Corridor and TANAP

Trans Adriatic Pipeline (TAP)

Total Length:
870 km (Greece 545 km, Albania 211 km, Italy 8 km, Adriatic Sea 105 km)

Greece	Albania	Italy
545 km	211 km	8 km

Shareholders

SGC (SOCAR + MoE)	SGC 20%	FLUXYS	Fxuxys 19%
bp	BP 20%	enagas	Enagas 16%
SNAM	SNAM 20%	axpo	Axpo 5%

Trans Anatolian Natural Gas Pipeline (TANAP)

Total Length:
1850 km (Turkey)

Turkey
1850 km

Shareholders

SGC (SOCAR + MoE)	SGC 58%
BOTAŞ	BOTAŞ 30%
bp	BP 12%

South Caucasus Pipeline Expansion (SCPx)

Total Length:
691 km (Azerbaijan 443 km, Georgia 248 km)

Azerbaijan	Georgia
443 km	248 km

Shareholders

bp	BP 28.83%	Petronas	Petronas 15.5%
TPAO	TPAO 19%	Lukoil	Lukoil 10%
SOCAR	SOCAR 10%	NIOC	NIOC 10%
SGC	SGC 6.67%		

Technical Operator – BP, Commercial Operator – SOCAR

Shah Deniz Consortium (SHD II)

Reserves:
1,4 trillion cubic meters (tcm)

Shareholders

bp	BP (Operator) 28.83%
TPAO	TPAO 19%
SOCAR	SOCAR 10%
SGC	SGC 6.67%
Petronas	Petronas 15.5%
Lukoil	Lukoil 10%
NIOC	NIOC 10%

TANAP Safety Management System

The Pillars-Planning Phase

- Turkish Law No. 6331 (H&S Law) and relevant regulations
- Lessons Learned from previous similar projects
- Standards of international financial corporations (i.e. WB, EBRD etc.)
- Best practices (IPLOCA, IOGP etc.)
- The Requirements of IMS System Standards (OHSAS 18001-now ISO 45001)

TANAP Safety Management System

The Challenges

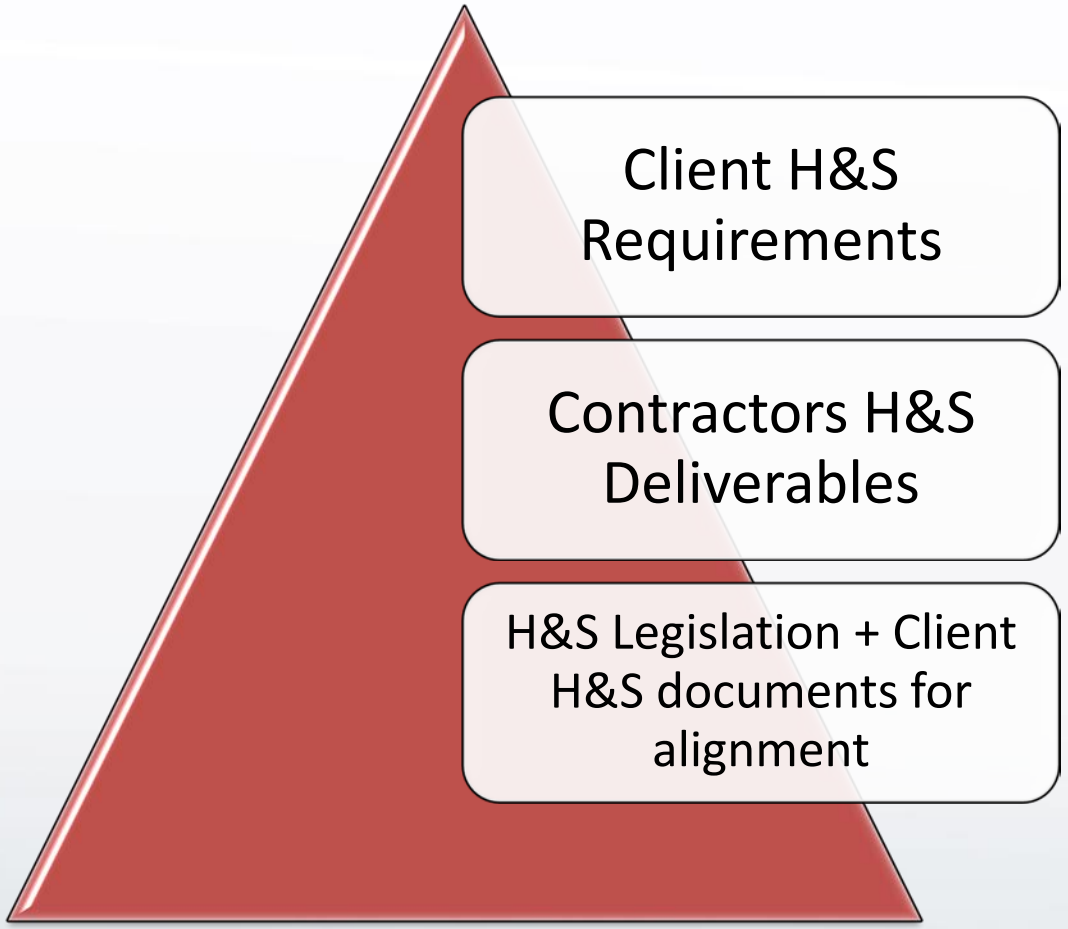
- **Road Safety**
  - Risks for people and material transports
  - More than 4500 off-road vehicles including pipe trucks, regular trucks

- **Resourcing for key positions:**
  - NEBOSH certified H&S Advisors with pipeline projects experience
  - H&S Managers
  - Training Managers
  - Health Advisors

- **Aligning various Project contractors with TANAP requirements - Safety Awareness**

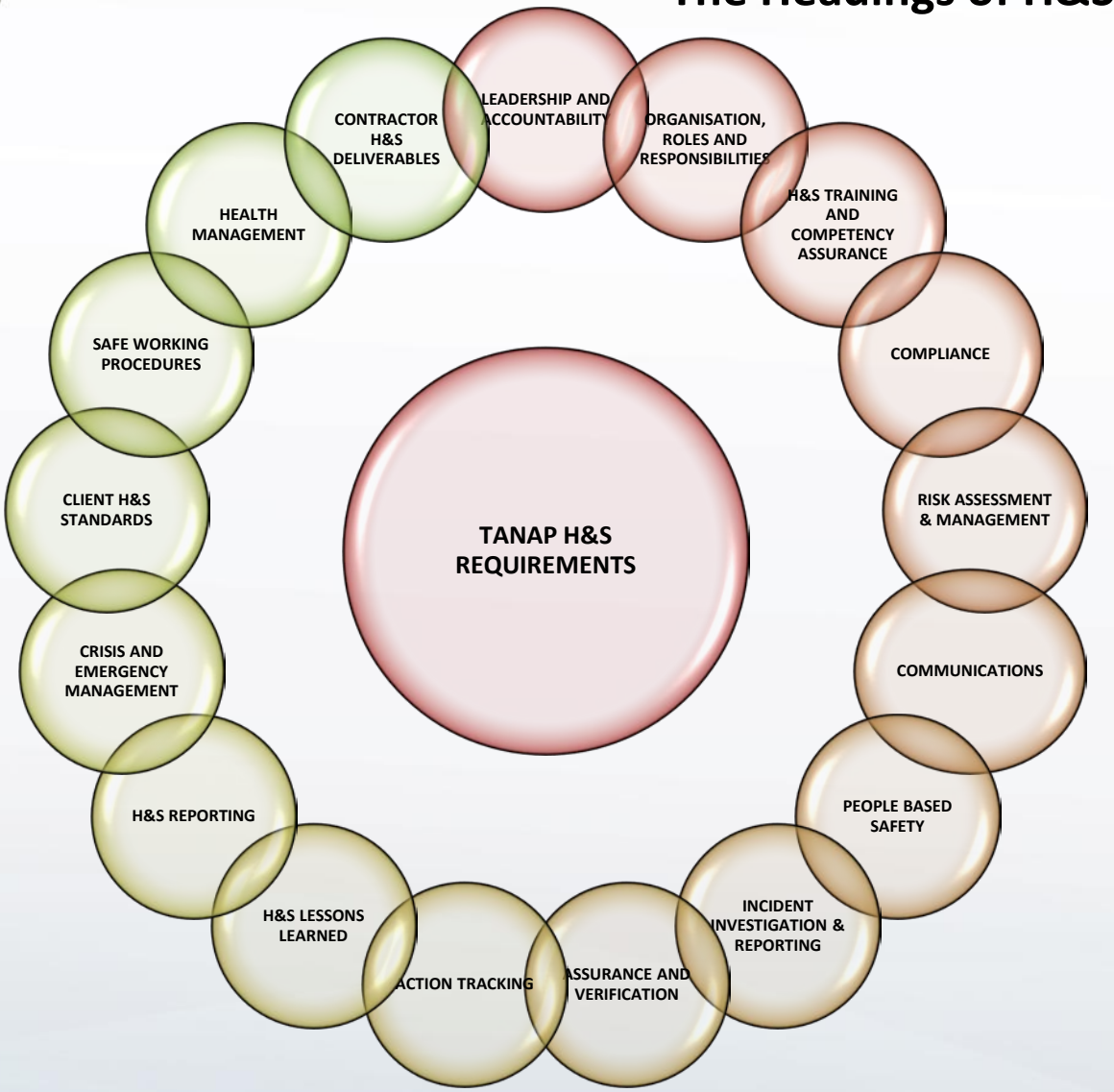
TANAP Safety Management System

The Hierarchy of H&S Requirements



TANAP Safety Management System

The Headings of H&S Requirements



TANAP Safety Management

Implementation

- TANAP Safety requirements reflected into the Main Contract documents for all Contractors.

- **Contractors** developed project specific Safety related manuals, plans, procedures **reviewed and approved by TANAP** as per the Contract.

- TANAP documents only for the following topics:
  - Incident Investigation Procedure
  - Safety Disciplinary Actions Procedure
  - PTW Procedure to be implemented for LineFill/Comm & Ops Phase
  - Emergency Response for HQ and site medical evcuation

TANAP Safety Management System

The H&S Requirements-Contractors Documents

H&S Management System & Plan	H&S Organization Chart	CV of H&S Manager	CV of H&S Advisors	CV of Health Advisor	CV of Training Manager	H&S Training Plan
H&S Booklet	H&S Orientation & Induction Training Package	Supervisory Training Package	Safety Leadership Programme	Compliance Tracking Register	Risk Assessment Procedure	All Risk Assessments
People Based Safety Program	Disciplinary Action Procedure	Incident Investigation & Reporting Procedure	H&S assurance and Verification Procedure	Crisis & Emergency Management Procedure	Emergency Response Plan	Driver, Vehicle and Journey Management Plan
Driving Handbook	Crane & Lifting Operations Procedure	Permit to Work Procedure	Personal Protective Equipment Procedure	Respiratory Protective Equipment	Excavation and Trenching Procedure	Plant & Equipment Procedure
Inspection of Plant & Equipment Procedure	Fall Protection Procedure	Temporary Barriers and Fencing Procedure	Safe Handling, Transport and Usage of Compressed Gas Cylinders	Fire Prevention Procedure	Pre-mobilization Comprehensive Health Review	Initial Health Monitoring Report
		Project Health Risk Assessment	Drug & Alcohol Policy and Management Procedure	Medical Emergency Response Plan		

TANAP Safety Management

Leadership

- Safety Committment Letter signed by Senior Management and shared with each and every Contractor and within TANAP.
- Quarterly Safety Walk-Downs by TANAP Senior Management
- Weekly Site Construction Leads Safety Walk-Down Programmes
- Quarterly TANAP-Contractors Senior Management Safety Forums

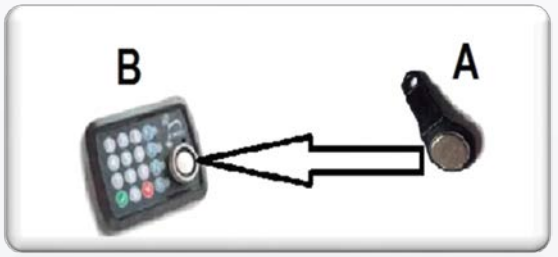
Safety Team

- As per the competency requirements of key positions (Safety Manager, Safety Advisor, Training Manager, Health Advisor)
- 1/50 ratio for Advisor positions
  - TANAP Safety Team - 52 Professionals
  - Contractors Safety Teams - More than 200 H&S Professionls at peak time
- Provision of Advisors to risky activities such as:
  - Excavation
  - Crossings
  - Lowering In
  - Tie-In welding
  - Night Works (subject to special permission)

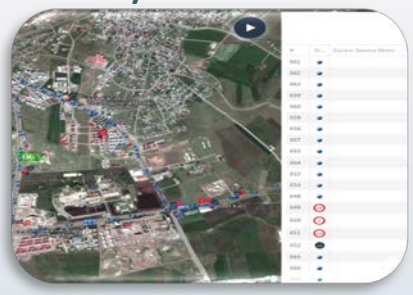
Road Safety
Tools

- Driver Permit Card

- Driver Recognition buttons



- IVMS System



- Safe Pass

- Vehicle Cameras

- Road Risk Assessments

TANAP Safety Management

Assurance and Verification

Daily H&S Inpections	• Based on march-charts • Pre-developed checklists
H&S Audit Programme	• Lifting • Road Safety • Occupational Health and Hygiene • WAH
Regular Site Visits	• Based on a pre-determined H&S Walk-down Programme-weekly • Senior Management H&S Walk-down Programme-quarterly
ATR	• Action Tracking Register • Centralized • Open to Ankara and Site H&S & Delivery Managers
H&S Meetings Schedule	•Daily H&S Meetings-site •Weekly H&S Meeting- TANAP & Contractors •Construction Progress Meetings-Monthly •H&S Committee Meetings-Monthly •Contractor Senior Management H&S Forums-quarterly

TANAP Safety Management

Performance Measurement

Daily Reports	• From Contractors to TANAP at site • From TANAP H&S to Ankara HQ
Weekly/Bi-weekly Reviews	• During weekly site meetings • During HQ meetings - MOM
Monthly Performance Reports	• Summary of the subject month's H&S performance • LLDs • Comparison the project H&S performance with the pre-set targets and actions to be taken for improvement • Trend Analysis

TANAP Safety Management

Performance Measurement

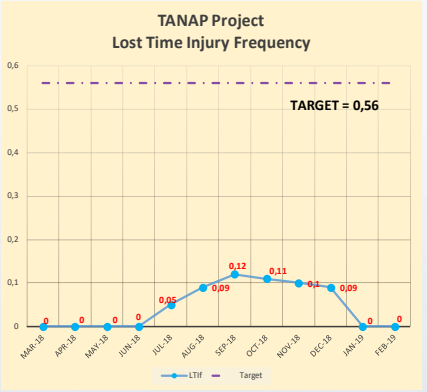
TANAP - H&S MANAGEMENT SUMMARY FEBRUARY *2019*

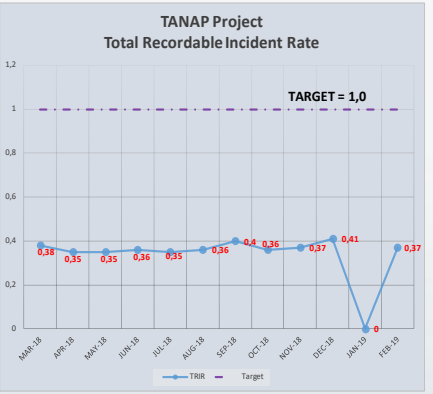
INPUTS	CURRENT MONTH										YEAR TO DATE										PROJECT TO DATE									
	TANAP IPMT	LOT 1	LOT 2	LOT 3	LOT 4	STATIONS	TSC	OFF-SHORE	L & C	TOTAL	TANAP IPMT	LOT 1	LOT 2	LOT 3	LOT 4	STATIONS	TSC	OFF-SHORE	L & C	TOTAL	TANAP IPMT	LOT 1	LOT 2	LOT 3	LOT 4	STATIONS	TSC	OFF-SHORE	L & C	TOTAL
HS TRAINING HOURS	1.507	27	0	0	5.089	16.122	395	0	62	23.202	1.918	77	0	0	11.031	26.252	787	0	109	40.174	87.853	112.749	136.308	105.749	211.998	361.333	31.303	4.985	5.321	1.057.590
#SAFETY OBSERVATIONS	0	1	0	0	1.182	3.121	95	0	42	4.447	19	3	0	0	3.214	6.526	144	0	60	9.966	4.471	3.584	8.458	11.969	37.231	51.069	3.212	3.064	1.426	124.484
H&S TRAINING RATE (Trg: 11.500 hrs/1 million manhours)	12.133	1.923	0	0	16.170	20.342	10.748	0	2.529	17.755	7.564	N/A	N/A	N/A	16.467	15.874	10.954	N/A	2.248	14.727	6.169	7.864	8.112	7.314	13.253	11.821	26.278	7.543	11.153	9.727
SAFETY OBSERVATION RATE (Trg:1.500 SOB/1 million manhours)	48	71	0	0	3.756	3.938	2.585	0	1.713	3.403	75	N/A	N/A	N/A	4.798	3.943	1.988	N/A	1.233	3.654	314	250	503	828	2.328	1.671	2.696	4.636	2.989	1.145

PERFORMANCE OUTPUTS	CURRENT MONTH										YEAR TO DATE										PROJECT TO DATE									
	TANAP IPMT	LOT 1	LOT 2	LOT 3	LOT 4	STATIONS	TSC	OFF-SHORE	L & C	TOTAL	TANAP IPMT	LOT 1	LOT 2	LOT 3	LOT 4	STATIONS	TSC	OFF-SHORE	L & C	TOTAL	TANAP IPMT	LOT 1	LOT 2	LOT 3	LOT 4	STATIONS	TSC	OFF-SHORE	L & C	TOTAL
LTIf (0,56)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,63	0,28	0,89	0,28	0,19	0,03	0,00	0,00	0,00	0,33
TRIR (1,0)	0,00	0,00	0,00	0,00	0,00	1,26	0,00	0,00	0,00	0,77	0,00	0,00	0,00	0,00	0,00	0,60	0,00	0,00	0,00	0,37	1,47	1,88	1,37	1,45	1,00	0,43	0,84	0,00	0,00	1,12
RTAf (0,95)	0,00	0,00	0,00	0,00	0,00	1,35	0,00	0,00	0,00	0,49	0,00	0,00	0,00	0,00	0,00	0,54	4,24	0,00	0,00	0,44	0,85	1,87	1,25	0,53	0,73	0,35	0,87	0,00	0,00	0,88
#FATALITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	0	1	0	0	0	0
#LTI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	4	15	4	3	1	0	0	0	36
#MTC / RWC	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	12	23	8	17	13	12	1	0	0	86
#RTA	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	2	55	34	45	20	29	7	3	0	0	193
#PROPERTY DAMAGES	2	0	0	0	0	2	0	0	0	4	4	0	0	0	4	2	1	0	0	11	66	106	49	58	99	53	6	0	2	447
#HIPO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8	11	3	0	6	0	0	0	30
#NEAR MISSES	0	0	0	0	0	3	0	0	0	3	4	0	0	0	2	10	1	0	0	17	74	148	69	45	124	310	11	7	3	791
#FIRST AID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	23	73	58	76	73	113	7	1	0	424
MAN-HOURS	124.206	14.040	0	0	314.720	792.528	36.751	0	24.514	1.306.759	253.568	28.600	0	2.592	669.870	1.653.553	72.439	0	48.481	2.729.103	14.240.509	14.336.613	16.803.100	14.458.094	15.996.015	30.566.194	1.191.229	660.888	477.010	108.729.652
KM DRIVEN	360.024	14.850	0	0	809.641	741.029	121.129	0	6.396	2.053.049	745.927	54.050	0	8.000	1.641.868	1.864.505	235.761	0	10.525	4.560.636	64.546.841	18.136.784	35.878.697	37.596.659	39.625.166	19.978.949	3.452.744	209.526	510.405	219.935.771

TANAP MONTHLY H & S KPI SUMMARY BOARD

Number of Perfect Days	LOT 1	LOT 2	LOT 3	LOT 4	STATIONS	OFFSHORE	TSC	Target
7 (Feb - 2019)								
TRIR Total Recordable Incident Rate	😊	😊	😊	😊	😊	😊	😊	1.0
LTIf Lost Time Injury Frequency	😊	😊	😊	😊	😊	😊	😊	0.56
RTAf Road Traffic Accident Frequency	😊	😊	😊	😊	😊	😊	😐	0.95
H & S Training Frequency Rate	N/A	N/A	N/A	😊	😊	😊	😐	11.500 hrs/ million mnhrs
Safety Observation Rate	N/A	N/A	N/A	😊	😊	😊	😊	1.500 SOB/ million mnhrs

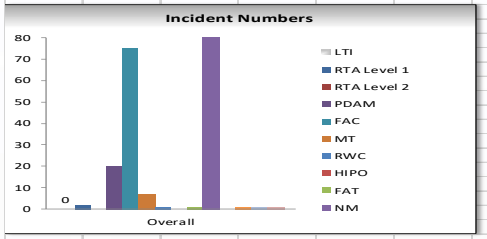


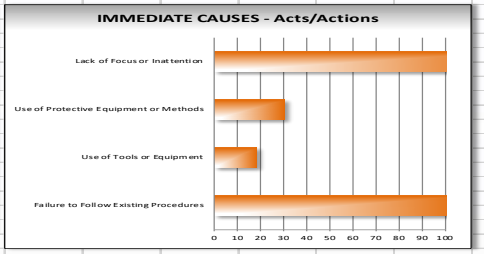


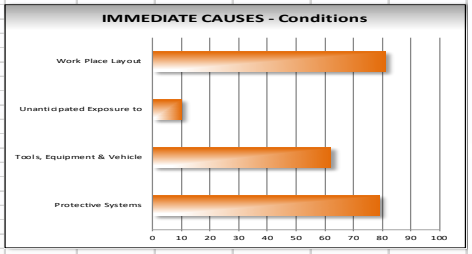
TANAP Safety Management

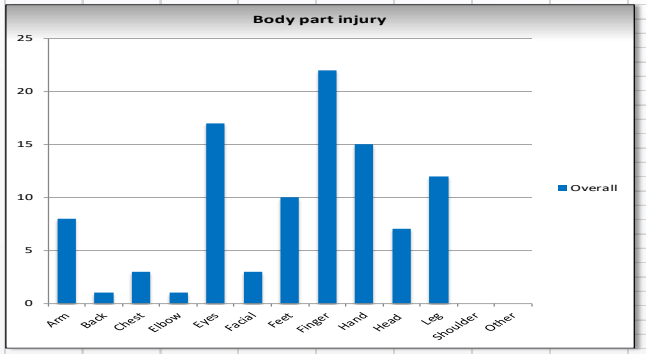
Incident Analysis

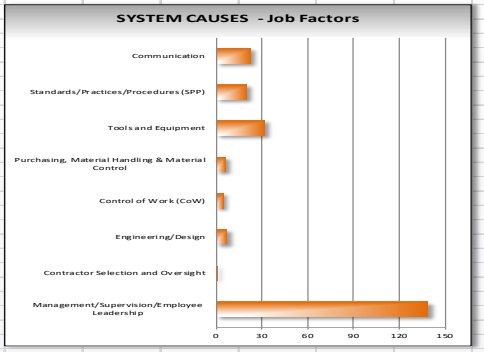
CS5-MS2 H&S DASHBOARD

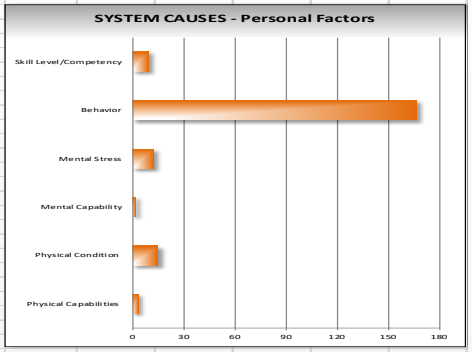


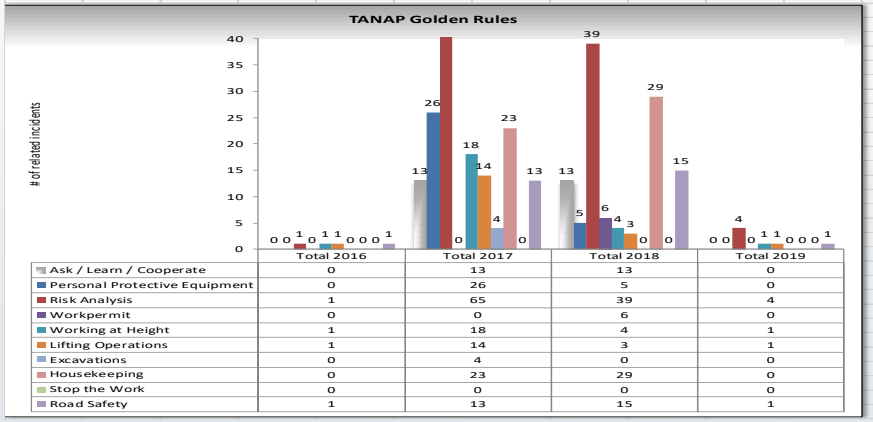












	Total 2016	Total 2017	Total 2018	Total 2019
Ask / Learn / Cooperate	0	13	13	0
Personal Protective Equipment	0	26	5	0
Risk Analysis	1	65	39	4
Workpermit	0	0	6	0
Working at Height	1	18	4	1
Lifting Operations	1	14	3	1
Excavations	0	4	0	0
Housekeeping	0	23	29	0
Stop the Work	0	0	0	0
Road Safety	1	13	15	1

- Based on a H&S Training Plan Matrix of Contractors:
  - Supervisor/Foreman Safety Leaderhip
  - Risk Assessment
  - COSHH
  - Road Safety
  - Confined Space
  - WAH
  - Lifting
  - RCA etc
- TANAP Line of Fire & Road Show Campaigns
- TANAP PTW (SC,AA,PA,IA) & Red Zone trainings

TANAP Safety Management

Incentive Programme and Disciplinary Actions

- TANAP H&S Incentive Programme
  - Monthly monetary awards for good performances
  - Instant gifts for exemplary safe behaviours
  - Monthly Recognition Programme

- TANAP H&S Discipline Procedure
  - Zero tolerance to persisting safety violations
  - More than 300 project employees subject to infringements

TANAP Safety Management System

Targets,2019

LTIf	RTA	TRIR
Lost Time Incident Freq	Road Traffic Accident Rate	Total Recordable Incident Rate
0,56	0,95	1,0

TANAP Safety Management System

H&S Performance as of March 2019

More than 222.000.000 km driven

Worked more than 110.000.000 man-hours

Lost Time Injury Frequency (LTIf) 0,00

Total Recordable Incident Rate (TRIR) 0,24

Road Traffic Accident Frequency (RTAf) 0,30

Thank you for listening!