



**NATIONAL OCCUPATIONAL STANDARDS**

**CENTRAL CONTROL OPERATOR (BURNER)  
LEVEL 5**

**REFERENCE CODE / 09UMS0038-5**

**OFFICIAL GAZETTE DATE-NUMBER/ 28.12.2009 - 27446**

<b>Occupation:</b>	<b>CENTRAL CONTROL OPERATOR (BURNER)</b>
<b>Level</b>	<b>5<sup>1</sup></b>
<b>Reference Code</b>	<b>09UMS0037-4</b>
<b>Institution(s) Preparing the Standard</b>	<b>CEMENT INDUSTRY EMPLOYERS' ASSOCIATION (CEIS)</b>
<b>The Sector Committee that will Certify the Standard:</b>	<b>VQA Glass, Cement and Soil Sector Committee</b>
<b>Certification Date/Number of VQA Administrative Board</b>	<b>15.12.2009 Dated and 2009/65 Numbered Decision</b>
<b>Date/Number of Official Gazette:</b>	<b>28.12.2009-27446</b>
<b>Revision No:</b>	<b>00</b>

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<sup>1</sup> The competency level of the occupation was determined as four (4) in octal (8) level matrix.  
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## TERMS, SYMBOLS AND ABBREVIATIONS

ABGAS means exhaust gas,

ABGAS FAN means the fan ensuring suction in the kiln system,

MAIN DRIVE means the main engine,

INCIDENTAL STOP means the unexpected sudden stops,

BURNER means the equipment which ensures that fuel is completely burned by mixing it with air at an appropriate rate,

BUNKER means open/closed storage area (feeding area),

DEBI means mass or volumetric flow speed of fluid,

MILL means grinder,

RAW MEAL means the state of raw material which is pulverized like flour,

PNEUMATIC BELT means the belt used for transporting products such as cement, lime, cinder through pneumatic (related to air or other gas pressure) transportation methods,

SPIRAL CONVEYOR means the system used in horizontal, angular or vertical transportation of cement or similar powder or granule solids,

ISCED means International Standard Classification of Education,

ISCO means International Standard Classification of Occupations,

OHS means occupational health and safety,

KILN HEAD PRESSURE means the equilibrium pressure occurring at the kiln head,

CALCINATION means the state of raw meal ready to be burned / decomposition of  $\text{CaCO}_3$ ,

CHAMBER PRESSURE means the static pressure determining the amount of the **stuffing** in cooling,

PPE means personal protective equipment,

VALVE means the equipment used for adjusting the amount and/or direction of flow on process lines,

CLINKER means the semi-finished cement (burned state of raw meal),

CONTAMINATED WASTE means the wastes defined in Regulation on Control of Hazardous

Wastes,

LSF means lime saturation factor,

NACE means Statistical Classification of Economic Activities in European Union,

PARAMETER means variable values in the system,

PLANNED SHORT SHUTDOWN means short-term shutdown with partial maintenance purposes,

PLANNED LONG SHUTDOWN means revision (refractory change, long-term shutdown with planned maintenance purposes),

REFRACTORY means heat-resistant lining material,

REVISION means comprehensive maintenance and repairs,

CYCLONE means the closed unit decomposing gas and solid,

SILO means closed storage field (with impermeability),

SM means Silicate Module,

**MOLTEN** means the fused and adherent state of material, poured into cooling from the kiln,

SHOCK TUBE / PULSE means the system which exhausts pressured air rapidly,

ATTEMPER means to have a system reach the appropriate heat,

TM/AM means aluminate/ton module,

TERTIARY means calciner line gas flow pipe parallel to the kiln,

VIBRATION means the act of vibrating,

AUXILIARY DRIVE means low-speed auxiliary engine,

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## **1. INTRODUCTION**

Central Control Operator (Burner) (Level 5) national occupational standard was prepared by Textile and Industry Employer's Union of Turkey (TTSIS) in accordance with the provisions of "Legislation Related to the Preparation of National Occupational Standards" and "Legislation Related to the Establishment, Tasks and Working Principles of Vocational Qualifications Authority" introduced according to the 5544 numbered Law of Vocational Qualifications Authority (VQA).

Central Control Operator (Burner) (Level 5) national occupational standard was evaluated by taking the thoughts of related institutions and organizations in the sector and was approved by VQA Administrative Board after being reviewed by VQA Textile, Ready-Made Clothing, Leather Sector Committee.

## **2. DESCRIPTION OF OCCUPATION**

### **2.1. Occupation Definition**

Central Control Operator (Burner) (Level 5) is the person who has the knowledge and ability to perform the works like monitoring the clinker burning process parameters, starting and stopping the system in conformity with the instructions related to work health and safety, quality control, environmental protection standards and work.

### **2.2. The Place of the Occupation within the International Classification Systems**

<b>ISCED 97</b>	: 524
<b>ISCO 08</b>	: 8114
<b>NACE Rev.2</b>	: 23.51

### **2.3. Regulations Related to Health, Safety and Environment**

4207 Numbered Law Related to Prevention and Control of the Damages of Tobacco Products  
4857 Numbered Labor Law  
Regulation for Health and Safety Measurements as Working with Asbestos  
Regulation for Prevention of the Risks of Exposure to Biological Factors  
Regulation for the Procedures and Principles of Trainings on Employee Occupational Health and Safety  
Regulations Related to Environmental Law  
Regulation for Health and Safety Measurements as Working with Equipments Having a Screen  
Regulation for Internal Electrical Installations  
Regulation for the Authority, Tasks and Responsibilities of Scientists Related to Electricity  
Regulation for the High Tension Electric Current Plants  
Noise Regulation  
Notification on Principles and Procedures for the Preparation of Safety Data Forms  
Safety and Health Signs Regulation  
First Aid Regulation  
Regulation for Health and Safety Conditions in the Use of Work Equipments  
Regulation for the Tasks, Authorities, Responsibilities and Working Procedures and Principles of the Engineers or Technical Staffs who are Responsible for Occupational Safety  
Regulation for the Occupational Health and Safety Committees  
Occupational Health and Safety Regulation  
Regulation for Workers Health and Occupational Safety  
Regulation for the Tasks and Working Procedures and Principles of Workplace Health Units and Physicians  
Regulation for the Health and Safety Measurements as Working with Carcinogenic and Mutagenic Substances  
Regulation for Health and Security Measurements as Working with Chemical Substances  
Personal Protective Equipment Regulation  
Regulation for Machine Protective

Regulation for the Measurements to be taken in Works and Workplaces where Flammable, Explosive, Dangerous and Hazardous Substances are Used

Regulation for the Protection of Workers from the Risks in Explosive Environments

Hazardous Chemicals Regulation

Vibration Regulation

Fire Regulation

In addition to this, it is essential to obey to the other legislations, laws, regulations, rule and regulations in force related to the work health and safety and make a risk analysis concerning to this issue.

#### **2.4. The Other Legislation Related to the Occupation**

Regulation for Heavy and Dangerous Works

Regulation for Manual Handling Works

Regulation for Occupational Health and Safety in Temporary or Fixed-term Works Preparation of the

Regulation for Working Hours that cannot be Divided into Weekly Workdays

Regulation for Preparation, Completion and Cleaning Works

Overwork Regulation Related to Labor Law

Regulation Related to the Health and Safety Precautions to be taken in Workplaces, Buildings and Outbuildings

Regulation for Taking Business License and Operation License

Regulation Related to the Employment of Women Workers for Night Shifts

Regulation for the Employment of Handicapped Persons, Ex-convicts and Terror Sufferers

Regulation for Private Procedures and Principles Related to Operations in the Works Carried out by Employing Workers in Groups

Regulation for Social Insurance and Health Services

Regulation for Annual Leave

In addition to these, it is essential to obey to the other legislations, laws, regulations, and rules in force related to the occupation.

## **2.5. Working Environment and Conditions**

Central Control Operator (Burner) (Level 5) controls the operating mechanisms and systems of burning kilns in which raw meal, the raw material of cement, is converted to clinker, the main component of cement, in the cement plants. The burning process guided by these mechanisms and systems is the most fundamental and decisive stage of cement production and it is the process of converting raw materials chemically with high heat.

The center of working environment is control room. Operators work in shifts. The burners carry out the burning maneuvers, which require great care and continuous monitoring, in central control room which is an environment, kept closed for long periods. The moving area is limited and the operator works by sitting and depending on computers and control panels. Working conditions are generally stressful due to various risks stemmed from the product, process and kiln. Because the operators must look at the screens and panels and sit continuously, eye fatigue and stance disorders are possible.

## **2.6. Other Requirements Related to the Occupation**

Due to the conditions stemmed from working style and environments, while the Central Control Operator (Burner) (Level 5) controls the burning process of cement production on the one hand; he works coordinately and is in contact with the other concerned units such as mechanical, electrical and electronic units on the other hand.

For this reason, Central Control Operator follows the appropriate steps for the technique of the work by showing great care and concentration and he also acts in effective communication with other concerned units and authorized persons. For this reason, he must have a high level of sensorial perception and cognitive abilities.

### 3. OCCUPATION PROFILE

#### 3.1. Tasks, Operations and Performance Criteria

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
A	Taking measures relating to Occupational Health and Safety (OHS) and Environment  (Continued)	A.1	Participating in Environment and OHS training programs /meetings	A.1.1	Within the framework of daily experiences and observations, he determines training needs of his own or field-personnel.
				A.1.2	Within the framework of his determinations, he makes proposals for meeting the training needs.
				A.1.3	He participates in the training programs organized.
				A.1.4	He provides feedback and proposals about the training programs he attended.
		A.2	Ensuring that employees comply with Environment and OHS rules	A.2.1	He provides information to employees about OHS and Environment rules to be complied with at work through methods such as informing and showing.
				A.2.2	He provides information about risks and hazards within work environment.
				A.2.3	He provides information about cases that require emergency action.
				A.2.4	He provides information about things to be done during emergency action.
				A.2.5	He provides information about personal protective equipment and their usage.
				A.2.6	He provides information about safe usage of equipments and tools used.
				A.2.7	He provides information about caution signs at work environment and their meanings.
				A.2.8	He shows the information provided in theory by practicing and warning.
		A.3	Notifying deficiencies about Environment and OHS to relevant people	A.3.1	He determines the deficiencies relating to OHS and Environment, such as protective equipment, caution sign, insufficient lighting, at work environment.
				A.3.2	He informs the relevant people about remedying the deficiencies, such as personal protective equipment and caution sign, in written.
				A.3.3	He provides feedback, such as improvement request, changing and renewal, about personal protective equipment and equipments and tools which are unsuitable to use or unsafe.
				A.3.4	He informs the relevant people about the dangerous acts of employees and hazardous situations.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
A	Taking measures relating to Occupational Health and Safety (OHS) and Environment  (Continued)	A.4	Ensuring that the employees use personal protective equipments (PPE)	A.4.1	He monitors the employees in terms of PPE usage through observation.
				A.4.2	He determines deficiencies and usage errors about PPE usage.
				A.4.3	He makes warnings about deficiencies and usage errors.
				A.4.4	He sets an example about PPE usage by using the equipments.
				A.4.5	He informs relevant people about PPE usage.
		A.5	Ensuring that precautions about safety tape are taken for field safety	A.5.1	He determines the cases where safety tape should be lined and its place.
				A.5.2	He makes the decision on lining the safety tape/ receives the directive on lining the safety tape.
				A.5.3	He ensures that the safety tape is lined through field-personnel.
				A.5.4	In cases which constitute a risk in terms of OHS, he ensures the cleanness and order of the work environment.
		A.6	In case the pre-heating cyclones are obstructed, to stop the kiln	A.6.1	In case the cyclones are obstructed, he stops raw meal feeding.
				A.6.2	He shuts the fuels down.
				A.6.3	He decreases the revolution of the kiln.
				A.6.4	If it's a long shutdown, he activates the rotary kiln with auxiliary drive.
				A.6.5	He ensures sufficient suction at the obstructed cyclone pre-heating group.
				A.6.6	He brings the pulse/shock tubes to "hand" position.
				A.6.7	He ensures that the shock valves are closed through field personnel.
				A.6.8	He ensures that the energy, level meters of the obstructed cyclone are shut down.
		A.7	Ensuring communication between control room and field (obtaining confirmation)	A.7.1	In order to eliminate the risk of hot gas reaction at the work field, he exchanges information with the field personnel concerning the suitability of the work environment necessary for opening of the obstructed cyclone.
				A.7.2	He exchanges information with the field concerning opening of the case cover of the cyclone.
				A.7.3	He obtains / gives confirmation between the field and the control room in important cases, such as starting and shut down, which include risk factors,

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
A	Taking measures relating to Occupational Health and Safety (OHS) and Environment	A.8	Contributing to interventions during cyclone obstruction	A.8.1	He observes working process concerning subjects such as PPE, usage of equipment and tools.
				A.8.2	He provides proposals and guidance concerning intervention.
				A.8.3	He provides proposals concerning errors and deficiencies observed during intervention.
				A.8.4	He commands by ensuring continuous contact between the control room and intervention teams.
		A.9	Exchanging information with the relevant people about work accidents	A.9.1	He receives information from the field concerning the accident which occurred, such as the place and unit where the accident took place and support needed.
				A.9.2	He informs the relevant people, such as supervisor, infirmary, fire station, about the accident.
		A.10	Participating in the activities of the emergency management teams	A.10.1	He receives information concerning the emergency action plan of the work place, such as reading the plan, participating in meetings.
				A.10.2	He takes in charge within the emergency teams such as safety, fire, according to assignment.
				A.10.3	He participates in the meetings organized by the units concerned with this subject.
		A.11	Exchanging information about work permits	A.11.1	He receives information from the field via monitor/radio/telephone concerning permits such as shutting down and turning on the energy, working in closed area.
				A.11.2	He transmits the information he received to relevant people.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
<b>B</b>	Following up the parameters of burning process  (Continued)	<b>B.1</b>	Monitoring product and process values / parameters	<b>B.1.1</b>	In accordance with the process monitoring directive, he controls the process values such as the suction, temperature, pressure, ampere, cyclone, clinker levels/flow rate, revolution, powder, tonnage, gas analysis values, transmission of raw meal to the kiln, vibration values and warnings, by reading them from the system monitors.
				<b>B.1.2</b>	He monitors factors such as flame and clinker control, <b>winding</b> /outlet arch formation at the kiln exit, cooling and heating temperature, flame tube control, through the cameras in the kiln chamber.
				<b>B.1.3</b>	He monitors factors such as material level, cooling regime, tertiary powder cyclone commodity flow, <b>molten</b> , refractor control, through the cameras in the cooling.
				<b>B.1.4</b>	He controls the product values in the system, such as fineness, LSF( (CaCO <sub>3</sub> /calcium carbonate) + magnesium rate = titration= lime standard) for the raw meal, Silicate (SM) and Aluminate (TM) module, in accordance with the product monitoring directive through the monitor or telephone.
				<b>B.1.5</b>	He controls the product values in the system, such as type, calories for fuels like coal, fuel oil, natural gas, fineness depending on type for coal and fuel oil, flame standard for natural gas, in accordance with the product monitoring directive through the monitor or telephone
				<b>B.1.6</b>	He controls the product values in the system, such as LSF, liter weight (density), free lime for the clinker, outlet temperature for the Silicate module (SM) and Aluminate module (TM), in accordance with the product monitoring directive through the monitor or telephone.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
<b>B</b>	Following up the parameters of burning process  (Continued)	<b>B.2</b>	Comparing the detected values with the standard values	<b>B.2.1</b>	He learns / receives the maximum and minimum values relating to the process and product continuously through the monitor or from the written directives.
				<b>B.2.2</b>	He compares continuously the maximum and minimum values received with the actual values in the system through methods such as seeing from the monitor, learning via telephone etc.
				<b>B.2.3</b>	In case of doubt about the actual values as a result of the comparison, he conducts/ ensures additional controls through in situ observation, obtaining confirmation via telephone/radio.
		<b>B.3</b>	Determining deviation and limit excess values	<b>B.3.1</b>	He determines the values that are outside of the minimum and maximum value range according to the comparisons made via monitor or telephone.
				<b>B.3.2</b>	He evaluates the accuracy of the deviations determined.
		<b>B.4</b>	Conducting corrective intervention	<b>B.4.1</b>	He determines the sources of the reasons of deviations based on deviation evaluation.
				<b>B.4.2</b>	According to the reasons/sources determined, he informs the relevant units and officers, such as unit supervisors, field operators, and auxiliary operations for intervention purposes.
				<b>B.4.3</b>	When necessary, he sets the system at manual / by-hand command status for intervention to deviations.
				<b>B.4.4</b>	He conducts the interventions, which he can personally do, such as correcting the deviating value/setting the value as it should be, with the help of the monitor.
		<b>B.5</b>	Analyzing the consequences of the intervention	<b>B.5.1</b>	After intervention, he controls whether the system returns to the values before failure/intervention, or not.
				<b>B.5.2</b>	If the intervention is not sufficient or if the system did not return to the desired values, he decides whether to conduct a second intervention or to shut down the system.
		<b>B.6</b>	Analyzing the alarms	<b>B.6.1</b>	He examines the color and aural warning/alarm signals given by the system in case of failure or deviation, such as electrical, mechanical.
				<b>B.6.2</b>	He evaluates the possible source / reason of the warning /alarm signals, such as electrical, mechanical, human, exceeding parametric values.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
<b>B</b>	Following up the parameters of burning process	<b>B.7</b>	Determining the failure	<b>B.7.1</b>	He determines the failure according to the results of intervention, alarm analysis and notifications from the field.
				<b>B.7.2</b>	He determines the reason of the failure.
		<b>B.8</b>	Informing the relevant people about the failure	<b>B.8.1</b>	He informs the unit supervisor, field operator, and relevant units such as electricity, facility maintenance, mechanic units, orally via telephone/radio, in written with job request form, about the failure determined.
				<b>B.8.2</b>	He provides feedback to the unit supervisor about the intervention process of the failure and its result.
		<b>B.9</b>	Ensuring storage of the defective products at the defined place	<b>B.9.1</b>	He notifies the clinker/semi-products, which do not conform to the specified standards according to the results from the laboratory, to the relevant units, such as mobile crane, feedstock.
				<b>B.9.2</b>	He separates the clinker/semi-products, which do not conform to the specified standards according to the results from the laboratory, by using the appropriate ways of conveyance.
		<b>B.10</b>	Ensuring that alternative / waste fuel is burned	<b>B.10.1</b>	He determines the suitable conditions for burning the alternative / waste fuel.
				<b>B.10.2</b>	He determines the fuel/waste, which is not suitable for burning.
				<b>B.10.3</b>	He determines the timing and amount of the process values, such as carbon, oxygen, and gas analysis, necessary for burning.
				<b>B.10.4</b>	He gives directives to the relevant personnel for burning the waste according to the determinations made.
				<b>B.10.5</b>	He monitors the waste being burnt from the system.
		<b>B.11</b>	Keeping the forms and books used in the process, such as daily operating report, defective product form, shutdown form	<b>B.11.1</b>	He regularly fills in the forms and books used in the process, by using the values/information such as system failures, shutdowns and their reasons and sources\ defective product, information about shifts, changing set values.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
C	Putting the system into use after long-term /planned and short-term/sudden shutdown  (Continued)	C.1	Applying cold test after planned shutdown	C.1.1	He controls in situ the equipments of the system, such as engine, spiral conveyor, elevator, pneumatic belt, valve, chain, balls, by operating them manually.
				C.1.2	By confirming the operation of the system equipments, he makes the last controls.
		C.2	Before putting the system into use, preparing liquid and/or gas fuel	C.2.1	By putting the fuel pump into use, he conducts fuel circulation with vapor.
				C.2.2	He drives the fuel injector forward.
				C.2.3	He makes the nozzle choice according to the temperature of the kiln.
				C.2.4	He pumps pressured vapor into the outward and return lines.
				C.2.5	For natural gas, he adjusts the suitable valves for natural gas of the flame tube.
		C.3	After the planned shutdown, drying the refractor according to the programme provided	C.3.1	Between 12 – 36 hours time periods, he applies the planned drying programme to the refractor.
				C.3.2	He follows up the gradual temperature increase of the refractor with heat-meters.
				C.3.3	According to the drying program, he confirms that the refractor has dried.
		C.4	After planned shutdown, setting the amount and type of fuel by monitoring the temperatures and suctions of the kiln, tertiary and pre- heater according to the programme provided	C.4.1	According to the temperatures envisaged in the attempering programme provided, he ensures that the coal is burnt when the burning temperature for coal is attained.
				C.4.2	By controlling the powder coal silo, he ensures that the coal to be burnt is available.
				C.4.3	In order to ensure that the coal attains the burning temperature, he increases the amount of natural gas; by enlarging the fuel nozzle, he increases the amount of fuel.
				C.4.4	Within the process following the beginning of attempering of the kiln, by turning on the tertiary burner, he supports the attempering of the pre-heater.
				C.4.5	He provides the amount of air necessary for burning by using the entrance/primer fan.
				C.4.6	He adjusts the suction necessary for the system with the revolution of the filter fan.
				C.4.7	He puts the flue gas/exhaust gas before coal is supplied.
		C.5	Running the kiln after planned shutdown according to the program	C.5.1	He runs the kiln according to the attempering programme by using the auxiliary drive.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
C	Putting the system into use after long-term /planned and short-term/sudden shutdown  (Continued)	C.6	Receiving intermediate goods into the kiln after planned shutdown	C.6.1	Within the kiln attempering programme, receiving raw meal into the kiln in order to protect the refractor.
		C.7	Putting the conveyance and cooling systems into use	C.7.1	Before the kiln temperature becomes suitable for receiving goods, he puts into use / starts the elevator, pneumatic belt, spiral conveyor, etc, kiln feeding lines, clinker cooling unit, conveyance systems.
		C.8	Receiving goods into the system (receiving raw meal)	C.8.1	He removes the kiln from auxiliary drive and transfers it to main drive engine.
				C.8.2	In order to increase suction, he provides the necessary revolution to the filter fan and exhaust gas fan.
				C.8.3	He ensures that the open cyclone covers and fresh air valves are closed.
				C.8.4	He adjusts the fuel amounts according to the exhaust gas revolutions.
				C.8.5	He ensures that the field operators take goods receiving positions.
				C.8.6	He receives goods into the kiln by putting raw meal scale into use.
		C.8.7	He ensures that the kiln attains optimum values by means of fuel, tonnage, kiln revolution, exhaust gas revolution, raw meal feed, increase of fuel, opening cooling airs.		
		C.9	After the system is put into use, informing auxiliary units such as quality control, coal and raw meal mills	C.9.1	About the process of putting the system into use, he informs the units of electric, boiler room, raw meal mill, coal mill, quality control, via telephone/ radio.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
C	Putting the system into use after long-term /planned and short-term/sudden shutdown	C.10	In case of short-term and sudden shutdown, running the kiln at slow revolution	C.10.1	If the short-term and sudden shutdowns are due to energy cut, he ensures that the kiln operates by putting the diesel engine or generator into use.
				C.10.2	In case of a sudden short-term shutdown, he activates the units which stopped.
				C.10.3	He ensures that the kiln is at goods receiving position.
		C.11	After planned shutdowns, obtaining information about programme revisions.	C.11.1	After planned shutdowns, he receives oral/written information about programme revisions from the relevant people, such as technicians, engineers, chiefs.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
<b>D</b>	Shutting the system down (Continued)	<b>D.1</b>	Before shutdown, informing auxiliary units such as coal mill, raw meal mill, about the planned shutdown.	<b>D.1.1</b>	He determines the units to be informed about the planned shutdown.
				<b>D.1.2</b>	He informs the relevant units in written/orally about the planned shutdown.
				<b>D.1.3</b>	About the planned shutdown, He confirms if the other units are convenient for the shutdown.
				<b>D.1.4</b>	According to the confirmation received, he determines if all the system is ready for the shutdown.
				<b>D.1.5</b>	In order to provide contribution to decision of shutdown, in line with the determinations and confirmations made, he provides feedback to the relevant people about the timing of shutdown.
		<b>D.2</b>	During the planned shutdown, emptying all the feeding, bunker and scales within the system according to the plan provided	<b>D.2.1</b>	He examines and evaluates the shutdown plan provided.
				<b>D.2.2</b>	He determines the units to be emptied according to the plan.
				<b>D.2.3</b>	He realizes the emptying process through the monitor according to the levels and values such as ampere, silo-meter, weighing and tonnage
				<b>D.2.4</b>	He obtains confirmation from the field operators about the result of the emptying process.
				<b>D.2.5</b>	In cases where emptying cannot be effectuated with the help of the monitor, he decides about the alternative emptying methods.
		<b>D.3</b>	During the planned shutdown, cutting the raw meal fed to the kiln	<b>D.3.1</b>	According to the shutdown plan provided, he shuts the raw meal feeding scale through the monitor.
				<b>D.3.2</b>	He obtains the confirmation that the raw meal and coal mills are shut down.
				<b>D.3.3</b>	He controls that the raw meal feeding line and pre-heating systems are emptied through the monitor.
				<b>D.3.4</b>	During emptying, he adjusts/decreases the abgas revolution, amount of the fuel fed to the system, kiln revolution, cooling fan flow rates.
		<b>D.4</b>	According to the amount of goods in the kiln, setting the coal amount	<b>D.4.1</b>	When passing onto planned long-term shutdown, with the help of the kiln cameras or assistant operator on field, he determines the amount of goods in the kiln and according to the amount of goods in the kiln; he adjusts/decreases the amount of coal.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
<b>D</b>	Shutting the system down (Continued)	<b>D.5</b>	During planned long-term shutdown, emptying the powder coal silo and	<b>D.5.1</b>	He confirms that the powder coal silo level of the coal mill is decreased to minimum level.
				<b>D.5.2</b>	According to the remaining amount of raw meal, he adjusts the coal amount.
				<b>D.5.3</b>	He empties the coal in the system by burning it.
				<b>D.5.4</b>	In case the coal finishes before the time planned, he prepares the alternative fuel.
				<b>D.5.5</b>	He empties the raw meal remaining in the kiln with alternative fuel.
		<b>D.6</b>	During planned long-term shutdown, emptying the kiln and shutting the main drive down	<b>D.6.1</b>	He confirms whether the kiln is emptied or not through the cameras and operators on the field.
				<b>D.6.2</b>	He stops the main drive through monitor.
				<b>D.6.3</b>	When he considers necessary, he puts the auxiliary drive into use / he ensures that it is put into use.
				<b>D.6.4</b>	If the kiln is in downwards position, he positions it upwards with the necessary intervention.
				<b>D.6.5</b>	He ensures that the kiln is in upwards position.
		<b>D.7</b>	During planned long-term shutdown, cooling the kiln	<b>D.7.1</b>	During planned long-term shutdown, since cooling the system rapidly is aimed, to the extent the flue gas regulated/calibration pressure permits, he keeps the revolution of the abgas and cooling fan at high levels.
				<b>D.7.2</b>	He monitors the kiln within the cooling process by observing the values such as dust emission, system's temperature, regulated/calibration pressure behind the abgas, water tower temperature.
				<b>D.7.3</b>	He confirms that the kiln has cooled down through monitor and field operator.
				<b>D.7.4</b>	He shares the information that the kiln has cooled with the relevant people.
		<b>D.8</b>	Keeping the temperature level during short-term and sudden shutdown, incidental shutdown	<b>D.8.1</b>	In accordance with the short-term shutdown directive, in order to keep the kiln at such a degree closest to the operating temperature, he adjusts the amount of coal, cooling fan revolutions, abgas revolution and suction valves.
				<b>D.8.2</b>	In accordance with the short-term shutdown directive, he runs the kiln at auxiliary drive.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
<b>D</b>	Shutting the system down	<b>D.9</b>	During planned long-term shutdown emptying the clinker at cooling	<b>D.9.1</b>	According to the cooling camera pressure and head pressure, he increases/decreases the revolutions of cooling fan and revolutions of cooling drive.
				<b>D.9.2</b>	He confirms the clinker conveyance system after cooling through monitor, camera and field operator.
				<b>D.9.3</b>	He ensures that the clinker remaining after cooling physically through methods such as sweeping.
		<b>D.10</b>	During planned long-term shutdown ensuring the cleaning of the pre-heating	<b>D.10.1</b>	In coordination with the field personnel, he ensures the necessary pre-heating suction.
				<b>D.10.2</b>	He brings the shock tubes to manual control / control by hand with the help of the monitor.
				<b>D.10.3</b>	He ensures that the energy of the cyclone level meters is cut.
				<b>D.10.4</b>	He informs the relevant people to start the cleaning of the pre-heating group.
		<b>D.11</b>	During planned long-term shutdown, shutting the kiln down after it cools down	<b>D.11.1</b>	He controls if the kiln is in upwards position through the monitor.
				<b>D.11.2</b>	If it's not in upwards position, he ensures that the kiln is brought to upwards position.
				<b>D.11.3</b>	He controls whether the kiln has cooled down or not.
				<b>D.11.4</b>	If it has cooled, he shuts the kiln down through the monitor.
		<b>D.12</b>	Shutting the cooling equipments down	<b>D.12.1</b>	After the kiln is cooled and shut down, he controls whether the clinker conveyance system is emptied or not with the help of the monitor, camera and field operators.
				<b>D.12.2</b>	After the clinker conveyance system is completely emptied, he shuts the cooling fans and drives through monitor.
				<b>D.12.3</b>	In accordance with the directive, he ensures that the cooling covers are opened with the help of the field personnel.
				<b>D.12.4</b>	In accordance with the directive, he ensures that the field personnel conduct the control in the cooling.
				<b>D.12.5</b>	After he receives the confirmation that cooling is completely emptied, he stops the clinker conveyance system from the beginning towards the back/from the front towards the back.
		<b>D.13</b>	Conducting the refractor controls	<b>D.13.1</b>	He conducts the refractor control of the pre-heating group, kiln, cooling and tertiary line physically with his eyes or he ensures that these controls are made.
				<b>D.13.2</b>	In cases where he doesn't conduct the controls himself, he obtains information from the relevant people.
				<b>D.13.3</b>	He informs his supervisor about the refractor control.
				<b>D.13.4</b>	He provides recommendations about refractor change/repair.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
E	Conducting work organization  (Continued)	E.1	Obtaining written-oral information about the events of the previous shift	E.1.1	About the administrative and technical issues which occurred during the previous shift, he receives written information through methods such as shift book, forms, etc, he reads the shift book, he studies the entry forms, and he controls the information board/clipboard.
				E.1.2	About the administrative and technical issues which occurred during the previous shift, he receives oral information face-to-face, via telephone.
		E.2	Informing in written - orally the next shift about the events which occurred during the shift	E.2.1	He provides written information about the administrative and technical issues which occurred in his shift, by entering the data in the shift book and on the information board and by filling in the entry forms.
				E.2.2	He provides oral information about the administrative and technical issues which occurred in his shift
		E.3	Exchanging information with the supervisors and other units concerning the work	E.3.1	He receives written/oral information from supervisors concerning the work
				E.3.2	He provides written/oral information the supervisor/relevant unit concerning the work done/to be done.
		E.4	Conducting distribution of work between employees	E.4.1	He determines the personnel suitable for the work to be done, according to characteristics such as the level of knowledge and skills, physical competence, health conditions.
				E.4.2	He explains the work to be done to the relevant personnel in such a way that he can understand.
				E.4.3	He answers the questions of the personnel relating to the work.
		E.5	Controlling the work assigned	E.5.1	According to the task assigned, he controls the work done by the personnel through methods such as monitor, confirmation with the field, observation, etc.
				E.5.2	He determines deficiencies and errors.
				E.5.3	He provides feedback to the personnel.
				E.5.4	He shows how the work should be, practically if necessary.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
E	Conducting work organization	E.6	Ensuring the cleaning and order of the work environment	E.6.1	He takes necessary precautions during the cleaning-up of the keyboard and monitor.
				E.6.2	Except for the routine cleanings, he requests cleaning of the central control room and of the field from the relevant people when necessary.
				E.6.3	He ensures that the routine cleaning of the work environment and equipments are done.
				E.6.4	He controls the cleaning by obtaining confirmation about the cleaning done.
		E.7	Ensuring equipment – tools procurement	E.7.1	He determines the equipments and tools needed according to the work to be done.
				E.7.2	He makes written requests to the relevant people for the equipments and tools needed
				E.7.3	He controls the equipments and tools received by checking their properties such as their number, type.
				E.7.4	He ensures that lacking equipments and tools are supplied.
		E.8	Contributing to the assembly and disassembly of the refractor	E.8.1	He supports the supply of materials to be used in the assembly and disassembly of the refractor according to the plan by means of methods such as procuring from the warehouse, transfer and discharge.
				E.8.2	He controls the compliance of the bricklaying process to the plan.
				E.8.3	He controls the compliance of the concreting process to the plan.
				E.8.4	He ensures that the errors regarding inappropriate concreting and bricklaying processes are recovered.
				E.8.5	He accompanies the disassembly and evacuation.
				E.8.6	He controls the disassembly according to the plan.
				E.8.7	He ensures that the errors observed regarding disassembly are recovered.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
F	Following up activities relating to occupational development  (Continued)	F.1	Participating in orientation activities	F.1.1	He determines the orientation needs of himself and his personnel.
				F.1.2	He notifies the needs determined to the relevant people / he conducts orientation requests.
				F.1.3	He participates/ensures that other participate in the orientation training programs organized
				F.1.4	He provides feedbacks and recommendations about the orientation training programs in which he participated.
		F.2	Participating in training activities	F.2.1	Within the framework of daily experiences and observations, he determines the subject, content of the training needs of himself or his personnel.
				F.2.2	He makes requests from the relevant people within the framework of the needs determined.
				F.2.3	He participates/ensures that others participate in the training programs organized.
				F.2.4	He provides feedbacks and recommendations about the training programs in which he participated.
		F.3	Providing on-the-job training to the team/trainees he's working with	F.3.1	He informs the field personnel or the personnel of the subcontractor who work incorrectly according to his observations within the work processes.
				F.3.2	He provides information about the process and system to the trainees of the unit.
		F.4	Attending technical visits outside the factory	F.4.1	He participates in technical visits in order to learn or teach the new technology and system differences according to the assignments outside the factory.
				F.4.2	He notifies the impressions and evaluations he gained at the visits to his supervisor as a written report
		F.5	Educating burner candidates	F.5.1	He makes proposals for possible burner candidates amongst the field personnel.
				F.5.2	He ensures that the burner candidate get to know the field.
				F.5.3	He ensures that the burner candidate learns completely the system process flow.
				F.5.4	By accompanying the burner candidate he teaches how to control the system.
				F.5.5	By observing the burner candidate, he warns him when he makes a mistake and he shows him by applying
				F.5.6	He evaluates the performance of the burner candidate.

Tasks		Operations		Performance Criteria	
Code	Name	Code	Name	Code	Description
F	Following up activities relating to occupational development	F.6	Following up new technologies through means such as internet, magazines, brochures, periodicals	F.6.1	He follows technological developments within the occupation and sector, such as new equipments/tools, new methods, new systems, through means such as periodicals, internet, magazines, etc.
				F.6.2	He shares the information and documents he acquired with his personnel.
		F.7	Making proposals for increasing the efficiency and productivity of the work	F.7.1	According to his observations and experiences in production process, he notifies his recommendations which would support the efficiency and productivity of the work to his supervisor in written/orally.
				F.7.2	He obtains feedback about his proposals.

### **3.2. Materials and Equipments Used**

1. Tool-set
2. Sledgehammer
3. Computer
4. Notebooks and forms
5. Torch
6. Viewing mask for the kiln
7. Square
8. Crusher
9. Cameras
10. Personal Protective Equipment (Helmets, steel toe shoes, gloves, gas masks, ear plugs, visors, dust goggles, dust masks, fireproof clothes)
11. Compressor Gun (\*)
12. Drill
13. Temperature gauge
14. Tape measure
15. Needle
16. Chalk
17. Telephone
18. Radio
19. Cleaning materials and equipments
20. Scale
21. Printer

\* Not used in some of our plants.

### **3.3. Knowledge and Skills**

1. Alternative fuel knowledge
2. Analytical thinking skills
3. Ability and knowledge of using tools and equipments
4. Ability to work under pressure / cope with stress
5. Ability and knowledge of using computer
6. Environment protection knowledge
7. Ability to work in a team
8. Electrical-electronic knowledge
9. Knowledge about physics
10. Visual skills
11. Knowledge of reading the graphics
12. Communication skills
13. First aid knowledge
14. Ability to take initiative
15. Occupational health and safety knowledge
16. Quality knowledge (standard)
17. Ability to make decision
18. Ability to keep records
19. Chemistry knowledge (knowledge about clinker)
20. Mathematics knowledge
21. Mechanical knowledge
22. Occupational foreign language knowledge
23. Organization-coordination skills
24. Learning-teaching skills
25. Measuring knowledge
26. Ability to solve problems
27. Knowledge of refractory materials
28. Ability to take risk
29. Knowledge of system flow
30. Knowledge of technical drawing
31. Ability to use time well

### **3.4. Attitudes and Behaviors**

1. Guiding his colleagues correctly
2. Adopting environment, quality and OHS rules
3. To be pedant and patient
4. Making observations carefully
5. Take initiatives related to his tasks when necessary
6. Behaving quickly and practically
7. Being sensitive about the use and recovery of company resources
8. Ensuring his own and other persons' safety
9. Being participative in learning and teaching situations related to his occupation
10. Being open-minded for innovations and new ideas related to his occupation
11. Being proactive and sensitive against the risks
12. Coping with stress
13. Being calm and cool in stressful situations
14. Being attentive to the process quality
15. Being open to warnings and criticism.
16. Working by focusing on the work, operations and process

#### **4. TESTING, ASSESSMENT AND CERTIFICATION**

Testing and assessment to be carried out for certification of Central Control Operator (Burner) (Level 5) according to the national competency based on occupational standard will be carried out in written and/or oral examination theoretically and practically in testing and assessment centers where necessary conditions are fulfilled.

These codes of practice are detailed in national competencies to be prepared according to this occupational standard with testing and assessment method. The operations related to certification through testing and assessment are carried out within the scope of Occupational Competency, Examination and Certification Regulations.

## **ANNEX: The Persons Assigned in the Preparation of Occupational Standards**

### **1. The Occupational Standard Team of the Organization Preparing Occupational Standards**

Fusun GOKCEN,	Legal Expert in Cement Industry Employers' Association (CEIS)
Ozgur ACAR,	Research Specialist in Cement Industry Employers' Association (CEIS)
Aise AKPINAR,	Occupational Analysis/Dacum Team Coordinated and Moderator
Hayrunnisa SALDIROGLU,	Occupational Analysis/Dacum Moderator
Selcen AVCI,	Occupational Analysis/Dacum Team Co-Moderator and Reporter

### **2. Technical Working Group Members**

Ramadan BATUK,	Bursa Cimento Fabrikasi A.S.
Halil KOLE,	Mardin Cimento Sanayi T.A.S.
Garip SAHIN,	Oyak Bolu Cimento Sanayi A.S.
Cahit YAZGAN,	Nuh Cimento Sanayi A.S.
Ceyhun OZDEMIR,	Denizli Cimento Sanayi T.A.S.
Kubilay DuSUNCELI,	Limak Cimento Sanayi Ve Ticaret A.S. Ergani Branch

### **3. Persons / Institutions and Organizations whose opinion are requested**

#### **3.1. Institutions and Organizations**

Bursa Cement Plant Industrial Vocational High School  
Ergani Vocational and Technical Training Center  
Confederation of the Real Trade Unions  
Kars Gamp Institute Vocational High School  
Lafarge Aslan Cement Industrial Vocational High School  
Nuh Cement Industrial Vocational High School  
METU, Institute of Science  
Sanliurfa Anatolian Technical and Industrial Vocational High School  
T. Sise ve Cam Fabrikalari A.S.  
T. Soil, Ceramic, Cement and Glass Industry Employers' Association  
Ministry of Public Works and Settlement

Ministry of Labor and Social Security  
Ministry of Environment and Forestry  
Ministry of Energy and Natural Resources  
Ministry of National Education  
Ministry of Industry and Trade  
TCMA Cement Building Vocational High School  
Turkish Standards Institute  
Turkish Cement Manufacturers' Association  
Cimse-Is Trade Union (Turkey)  
Turkish Confederation of Progressive Trade Unions  
The Confederation of Turkish Tradesmen and Craftsmen  
Turkish Ready Mixed Concrete Association  
Turkey Exporters Assembly  
General Directorate of Turkish Employment Organization  
Confederation of Turkish Trade Unions  
Turkish Confederation of Employer Association  
Union of Chambers of Turkish Engineers and Architects  
Union of Chambers and Commodity Exchanges of Turkey  
Building Products Manufacturers Federation  
Directorate of Council of Higher Education

### **3.2. Persons**

Cengiz GOCER,	General Manager of Nuh Cimento Sanayi A.S.
Dogan OZKUL,	General Manager of Mersin Cement Plant of Cimsa Cimento Sanayi T.A.S.
Hakan GURDAL,	General Manager of Akcansa Cimento Sanayi T.A.S.
Kemal DOGANSEL,	General Manager of Oyak Bolu Cimento Sanayi A.S.
Melih AKSOYOGLU,	General Manager of Corum Cement Plant of Cimpor Yibitas Cimento San. Tic. A.S.
Mursel OZTURK,	General Manager of Bursa Cimento Fabrikasi A.S.
Suleyman ENGIZ,	Manager of Izmir Cement Plant of Cimentas Izmir Cimento Fabrikasi T.A.S.
Tugrul OZTURK,	General Manager of Ergani Branch of Limak Cimento Sanayi Ve Ticaret A.S.
Yusuf Ziya BEKIROGLU,	General Manager of Denizli Cimento Sanayi T.A.S.

### **4. VQA Sector Committee Members and Specialists**

Mursel OZTURK,	Chairman (Turkish Confederation of Employer Associations)
Mustafa SEVINC,	Deputy Chairman (Turkish Exporters Assembly)
Umut YUZER,	Member (Ministry of Labor and Social Security)
Saim HATIPOGLU,	Member (Ministry of National Education)
Nusret GUNGOR,	Member (Ministry of Energy and Natural Resources)
Ibrahim TUNCER,	Member (Ministry of Public Works and Settlement)
Ziynet Berna ORHAN,	Member (Ministry of Industry and Trade)
Prof. Dr. Abdullah BARAN,	Member (Directorate of Council of Higher Education)
Prof. Asim YEGINOBALI,	Member (Union of Chambers and Commodity Exchanges of Turkey)
Fikret YILMAZ,	Member (The Confederation of Turkish Tradesmen and Craftsmen)
Zekeriye NAZLIM,	Member (Confederation of Turkish Trade Unions)
Metin DEMIRSOY,	Member (Vocational Qualifications Authority)
Firuzan SILAHSOR,	Department Head (Vocational Qualifications Authority)
Sinan GERGIN,	Sector Representative (Administration for Disabled People)

## **5.VQA Administrative Board**

Bayram AKBAS,	Chairman (Ministry of Labor and Social Security Representative)
Prof.Dr.Oguz BORAT,	Deputy Chairman (Ministry of National Education Representative)
Yrd. Doc. Dr. Omer Acikgoz	Member (Council of Higher Education Presidency Representative)
Prof.Dr.Yucel ALTUNBASAK,	Member (Representative of Occupational Organizations)
Dr.Osman YILDIZ,	Member (Representative of Trade Union Confederation)
Celal KOLOGLU,	Member (Confederation of Employer Associations Representative)